THE

VETERINARY JOURNAL

JUNE 1902.

Editorial.

NEW VETERINARY LITERATURE.

UNDER this heading we reviewed in our May number a journal which recently made its appearance in Manchester. Since then our publishers have received the following letter:—"*Manchester, 14th May* 1902. Gentlemen—I call your attention to the publication by you of an article in the VETERINARY JOURNAL for May 1902, edited by Principal W. Owen Williams, F.R.C.V.S., containing several false, defamatory, and malicious libels on my professional character, and on the trade prospects of the *Provincial Veterinary Journal*, and I further warn you that unless amends are made for the injuries and damages so wantonly and gratuitously inflicted, the matter will be placed in the hands of our solicitors, who will take the necessary legal steps against you. Yours respectfully," (Signed) "JOHN HOWARD, M.R.C.V.S., &c. Messrs. Baillière, Tindall & Cox, Publishers, 8 Henrietta Street, Strand, London."

Now, we distinctly deny that we were actuated by any malicious feeling towards Mr. Howard, and on this point we are quite willing to submit to the decision of our readers. If our criticism of Mr. Howard's Latinity or of any other of his strange literary vagaries can be shown to be unwarranted by the facts of the case, we are ready to express our regret, and to offer an apology to Mr. Howard. Mr. Howard does not make any attempt to show in what way we have exceeded the bounds of frank and honest criticism. When a man enters the field of literature and poses as a scholar, he must be prepared for hard knocks if he makes ridiculous mistakes. We treated his publication as scarcely a serious one, and chaffed him accordingly. Why does he not take his chaffing in a good-humoured way, as he was compelled to take the banter of his school-fellows when he was at school? As for "false and defamatory libels on my professional character," this is simply nonsense. It was Mr. Howard the editor not Mr. Howard the veterinary surgeon whom we quizzed. We have not the honour of Mr. Howard's professional acquaintance, but are quite prepared to hear that in this respect he is absolutely immaculate, and to believe it if he tells us so. So far are we from wishing to injure a brother practitioner, that we are quite willing to lay the whole matter before

the President and Council of the Royal College of Veterinary Surgeons, and abide by their decision. Or, as an alternative, we will publish anything that Mr. Howard chooses to write to us in vindication of his writings and in refutation of our statements, so that our readers may have an opportunity of judging between us.

Mr. Howard talks of the "trade prospects of the *Provincial Veterinary Journal*" as having been injured, and perhaps therein lies the sting. But there are two sides to that question. We doubt very much whether the R.C.V.S. has not a grievance on this point against Mr. Howard. We sincerely hope that neither the *Lancet* nor the *British Medical Journal* has seen the *Provincial Veterinary Journal.* If either of these journals, or, let us say, Mr. Labouchere in *Truth*, gets hold of the now famous publication, we fear our friendly banter will be quite a pleasant sensation as compared with the trouncing which will follow. The literary journals would simply scarify Mr. Howard for his ghastly attempts at writing Latin; he would be covered with ridicule, Oxford men would actually hold him up to execration. Now, is it fair to us as a profession that one of our number should commit such a very grave indiscretion? We cannot, of course, charge him with any actual infringement of our regulations, and cannot therefore bring him before the Council for judgment and sentence; but are we therefore defenceless? We think not. Surely we are entitled to use the weapons of sarcasm and satire against such assailants. We are sorry if in the discharge of our plain duty we have hurt Mr. Howard's feelings, but we think he has brought the trouble entirely upon himself by rushing wildly into print without the necessary preparations for his task. The day may come—it may have already come—when medical men and other well-educated persons, taunting us with the wild and barbarous Latinity of Mr. Howard, will only be reduced to silence by the retort, "Yes, but see how the VETERINARY JOURNAL answered him." We really cannot say more.

Royal College of Veterinary Surgeons.

AT the Examinations just concluded the following students from the "New Veterinary College," Edinburgh, passed their D or Final, and were admitted members:—Messrs. W. A. Elder, Wokingham; H. Kirkby, Desford, Leicester.

Class C, Three Years (theoretical)—F. R. Shippard, and A. J. Macdonald.

Class C, Four Years—Messrs. Stanley, Elley,* R. Mairs,* R. M. Jones, J. C. Smith, and C. H. Wadlow.

Class B—Messrs H. E. Cross, 2nd hons., J. B. Chadwick, S. H. Gaiger, 2nd hons., H. A. Turner, 2nd hons., J. A. Fearnside, E. W. Nickson, 2nd hons., K. P. Rankin, J. Aitken, R. Tindle, H. W. Robinson, E. E. Elphick, A. Whitehead, J. Macauley.

Class A—Messrs. R. C. Allinson, R. F. Bett, W. Catterall, H. R. Laycock, J. Dodds, C. Taylor, and J. Sheffield.

Royal College of Veterinary Surgeons.

FIFTY-NINTH ANNUAL REPORT, FOR THE YEAR 1901-1902.

At the Annual General Meeting held on Wednesday, June 4th, 1901, in accordance with the provisions of the Charter, the following gentlemen were elected members of Council in the place of those who retired by rotation, viz.: Messrs. F. W. Wragg, A. C. Cope, J. H. Carter, W. O. Williams, W. Shipley, Jun., J. M'I. M'Call, W. J. Mulvey, J. M'Kinna, A. E. Mettam, and E. S. Shave. Professor W. Pritchard, and Mr. E. C. Winter having resigned, it became necessary to ballot for two members to fill their place, with the following result, viz., that Mr. A. C. Cope took the place of Mr. E. C. Winter, and Professor A. E. Mettam that of Professor Pritchard.

The Council have to report that at their first meeting, held on the 4th of July, Mr. Alex. Lawson, J.P., of Manchester, was elected President, and the following gentlemen were elected Vice-Presidents:—Messrs. A. C. Cope, Professor W. O. Williams, J. Abson, A. W. Mason, W. J. Bower, and Veterinary-Colonel F. Duck, C.B. Mr. F. W. Wragg was unanimously re-elected Treasurer, and Mr. A. W. Hill, Secretary and Registrar.

Appointment of Trustee in the place of the late Dr. G. Fleming.

Owing to the decease of Dr. G. Fleming, it became necessary to appoint a Trustee to the College funds, and Mr. A. C. Cope was duly elected to fill the office.

Resolution of Council.

The following resolution has been adopted by the Council, viz.:—"That the Secretary be instructed to write to the Secretary of the Educational Institute of Scotland, intimating that it is the desire of this Council that the special examination for intending veterinary students, sanctioned by the alteration of Bye-law 52 in April (1901), should be held simultaneously in London, Edinburgh, Glasgow, and Dublin, and a letter has been received that the Educational Institute of Scotland is prepared to conduct examinations in London, Edinburgh, Glasgow, and Dublin, in conformity with Bye-law 52."

Examiners and Examinations.

Owing to the death of Dr. G. Fleming, Examiner in Anatomy, Class B, and to the resignations of Mr. J. Malcolm, Examiner in Class D, Veterinary Medicine, and Mr. W. Harvey Bloye, Examiner in Anatomy, Class A, Mr. E. Wallis Hoare has been elected to fill the place of Dr. Fleming; Mr. W. Harvey Bloye to fill the place of Mr. J. Malcolm; and Mr. W. Robb that of Mr. W. Harvey Bloye.

Professional Examinations.

Since the last report 462 students have been examined. Of these 87 have received the diploma of membership.

The numbers examined in each class were—

Three Years Course.

	Presented.	Passed.	Rejected.
Class A,	—	—	—
Class B,	2	2	—
Class C (Oral),	7	3	4
Class C,	4	4	—

Fours Years Course.

Class A,	141	93	48
Class B,	109	65	44
Class C,	89	68	21
Class D,	110	83	27

Fellowship Examinations.

During the past year there have been two examinations for this degree, and the following gentlemen were admitted Fellows :—Messrs. J. H. Shepherd, W. E. Ison, T. O. Richardson, A. H. Berry, J. W. Coe, J. P. Heyes, H. G. Simpson, W. L. Harrison, H. W. Young, P. S. Howard, and W. Burt.

The Examiners were Professor J. Macqueen, Mr. J. Malcolm, and Mr. W. Hunting, who was elected to fill the place of Dr. G. Fleming, deceased.

Steel Memorial Medal.

The Council, after due consideration, have passed the following alterations to the regulations governing this medal :—That, in future, one silver medal instead of two bronze medals should be awarded not oftener than once in three years. The bronze medal on this occasion was presented to Mr. W. Hunting, F.R.C.V.S.

Walley Memorial Examination.

The Second Examination for the above Prize was held in London and Edinburgh on October 5th, when three candidates presented themselves for examination, and after very careful consideration by the Examiners the prize—the amount of the year's proceeds of the funds—was awarded to Mr. J. F. Craig, of the Royal Veterinary College, Camden Town, London.

Honorary and Foreign Associates.

The following have been elected by the Council as Honorary and Foreign Associates, viz. :

Dr. B. Bang, Veterinary Adviser to the Danish Government, Copenhagen ; and

Mr. Duncan Hutcheon, M.R.C.V.S., Principal Veterinary Adviser to the Government of the Cape of Good Hope, as a mark of recognition of the valuable work he has done in and for the South African Colonies.

Registration.

The Committee have considered 103 cases during the past year, eighty-four of which were new ones.

There have been very few cases in which it has been found necessary to prosecute unqualified persons for assuming the title of Veterinary Surgeon, or using the words Veterinary Forge, or Veterinary Establishment.

The Committee have had to consider a large number of charges of advertising, none of them of a serious nature.

The Council are glad to be able to report that it has not been found necessary to remove any name from the Register during the past year.

The names of several members have been restored to the Register, which had been struck off in consequence of non-compliance with Subsection 4 of Section 5 of the Veterinary Surgeons Act, 1881.

The Council have restored a name to the Register which was struck off a year ago, when an intimation was given to the offender that in the event of any complaint not being made against him for a year, the Council would consider the restoration of his name. No complaint having been made, the name has been restored accordingly.

The Council considered a complaint against an unqualified person who had obtained a Warrant as Equine Dentist to the King's Horses; the result of the action taken by them was that the Warrant was withdrawn on the application of the holder.

Fees to Veterinary Surgeons.

A letter has been received from the Under-Secretary of State, Home Office, to the following effect:

"SIR,—I am directed by Mr. Secretary Ritchie to acquaint you, for the information of the Council of the Royal College of Veterinary Surgeons, that after consultation with the Commissioner of Police of the Metropolis, and the Chief Magistrate of the Metropolitan Police Courts, he has framed the enclosed scale of fees to be allowed to Veterinary Surgeons for their services in examining animals at the request of the Metropolitan Police, and giving evidence in the courts in regard thereto; and I am to state that before issuing this scale Mr. Ritchie will be prepared to consider any observations on the subject which the Council may wish to submit to him.—I am, Sir, your obedient servant, HENRY CUNYNGHAM."

"TO THE SECRETARY,
THE ROYAL COLLEGE OF VETERINARY SURGEONS,
10 RED LION SQUARE.

"*Scale of Fees to be allowed to Veterinary Surgeons for their services in examining animals at the request of the Metropolitan Police, and giving evidence in the Metropolitan Police Courts in regard thereto.*

	s.	*d.*
"For the examination of an animal (including attendance to give evidence on the same day) . . .	10	6
"For attending to give evidence on a day other than that on which the examination was made . . .	10	6

"If two animals are separately examined at the same time, and evidence is given in respect of each of them on separate charges, the fee in the second case will be at the rate of 7s. 6d.; for each case after the second the fee will be 5s."

To which the Council after some discussion sent the following reply:—"That the Council of the Royal College of Veterinary Surgeons,

having considered the letter and enclosure of the Home Office, regret to say that the fees are altogether inadequate."

A further letter has been received from the Under-Secretary of State to the effect that Mr. Secretary Ritchie is unable to modify the revised scale of fees, which would come into force on the 1st of April.

The Secretary was instructed to acknowledge the letter and respectfully protest against the decision which had been arrived at, and again pointing out that the fees are altogether inadequate.

Presentations.

Library.—The following presentations have been made during the year :—"The Veterinarian," "The Veterinary Journal," "The Veterinary Record," "The Journal of Comparative Pathology and Therapeutics," "The Pharmaceutical Journal,"—by the Editors; The Calendar of the Royal College of Surgeons of England; The Calendar of the Pharmaceutical Society; Calendar of the College of Preceptors; Annual Report and Proceedings of the Board of Agriculture; Annual Report of the Bengal Veterinary Department; Annual Report of the Imperial Bacteriologist of India; A Text-book of Operative Veterinary Surgery, by the late Dr. G. Fleming.

Attendance of Members of Council.

	Council Meetings. (Total Number, 9.)	Committee.	
	Attendances.	Notices to attend.	Attendances.
F. W. Wragg,	8	16	15
J. H. Carter,	3	9	5
W. O. Williams,	6	10	5
W. Shipley,	7	8	6
J. M'I. M'Call,	6	9	6
W. J. Mulvey,	6	18	14
J. M'Kinna,	7	9	6
E. S. Shave,	4	4	1
J. F. Simpson,	5	18	11
J. M'Fadyean,	9	8	6
R. C. Trigger,	7	11	11
J. D. Lambert,	7	4	2
W. A. Byrne,	4	4	2
A. C. Cope,	3	12	5
Sidney Villar,	8	12	7
G. Wartnaby,	7	8	8
W. F. Barrett,	1	12	3
W. T. Bower,	7	8	4
J. R. U. Dewar,	4	5	4
C. Hartley,	7	4	2
Alex. Lawson,	7	18	9
S. Locke,	6	9	6
J. M'Call,	2	10	2
A. E. Mettam,	5	6	3
J. A. W. Dollar,	7	9	4
Gen. Sir F. Fitzwygram,	1	—	—
J. Penberthy,	4	16	6
A. W. Mason,	5	14	13
J. Abson,	6	8	7
J. Fraser,	3	10	5
F. Duck,	5	4	3
C. Allen,	2	9	1

Election of Auditors.

Messrs. R. Warner and J. Woodger were unanimously re-elected auditors for the ensuing year.

F. W. WRAGG, Esq., Treasurer, *in Account with the Royal College of Veterinary Surgeons for the Financial Period from 1st May 1901 to 30th April 1902.*

Dr.				*Cr.*		
To Cash at Bankers and in hand,		£172	6 2	By Examiners' Fees and Expenses,	£1457	0 5
Examination and Registration Fees,		2136	11 0	Fellowship Examiners' Fees,	55	17 6
Fellowship Examination Fees,	£173 5 0			Reporters,	21	11 2
Do. do. in hand for Examination in May,	31 10 0			Law Expenses,	95	0 2
		204	15 0	Auditors,	5	5 0
Highland and Agricultural Society's Registration Fee		1	1 0	Salaries and Wages (including grant to previous Secretary),	423	0 0
Restoration Fees,		5	5 0	Rates and Taxes,	111	14 8
Dividends on Consols,		197	1 8	Printing and Stationery,	172	14 3
Hire of Room,		6	6 0	Gas and Fuel,	17	0 4
Sale of Register,		20	9 11	House Expenses,	16	7 10
				Advertising,	17	5 4
				Library and Museum,	17	12 6
				Repairs to Premises,	2	6 5
				Delegates' Expenses,	12	10 0
				Insurance,	9	2 0
				Sundries, Petty Cash, &c.	90	13 2
				Cash at Bank, £204 5 9		
				Cash in hands of Secretary, 14 9 3		
					218	15 0
		£2743	15 9		£2743	15 9

Amount of Stock standing in the names of Trustees in British Consols —General Fund,		£7610	13 1	Walley Memorial Fund—		
				Stock,	£278	12 0
Steel Memorial Fund—				Cash and Interest as per last Account, £9 3 10		
Stock,	£269	1	3	Accrued Interest at Bank, 7 4 4		
Cash and Interest, as per last Account, £28 14 11				£16 8 2		
Accrued Interest at Bank, 6 19 4				Less Cash Prize, 7 4 4	9	3 10
£35 14 3					£287	15 10
Less Cash paid for Medal, 1 0 0						
	34	14	3	Bursary Account—		
	£303	15	6	Stock,	£864	13 3
				Cash and Interest, as per last account, £74 14 9		
				Accrued Interest at Bank, 22 7 8		
					97	2 5
					£961	15 8

ARTHUR W. HILL,
Secretary.

We, the undersigned, have examined the above Accounts, and find them correct.

RICHARD WARNER,
JOSEPH WOODGER, } *Auditors.*

7th May 1902.

New Veterinary College, Edinburgh.

THE Session 1901-2 of the New Veterinary College, Leith Walk, Edinburgh, closed on Thursday, 15th ult., when the medals and certificates were presented to the successful competitors by Principal Williams. In his closing address the Principal said he had much pleasure in announcing the termination of the twenty-ninth winter session of the College. During all that time the New College had been in honourable. and, he might say, not unsuccessful rivalry with the other Veterinary Colleges in Great Britain, and he had no doubt that if General Sir Frederick Fitzwygram had continued giving his valuable prizes they would have still taken their share, if not more, as they had done in the past. He also added that this was the termination of his twenty-first year as a teacher. He had no fear for the future of the College. It was not a matter for the students to take any special notice of what newspapers said about endowments to other Colleges. Though they had a struggle the same as others, yet they had managed to keep their heads above water for all these years without endowment. At the same time it was to be hoped that Government would soon see its way to take over veterinary education. The status of the veterinary profession was becoming higher every year. and the emoluments were becoming very much greater. There were men now in the Government employment who were getting at least £1500 a year, and many others were getting large salaries. The only blot at the present time was the want of proper recognition of the veterinary profession by the War Office. It seemed a most anomalous thing that while a doctor and a veterinary surgeon entered the army on exactly the same footing—if there be any preference, the veterinary surgeon received a few shillings per annum more than the doctor to start with—yet the doctor got his first promotion in three years, while the veterinary surgeon had to wait seven. When the doctor got to the top of the tree he ranked as a Lieutenant-General at £2000 a year, but when the veterinary surgeon got to the top of the tree he only ranked as a Lieutenant-Colonel, and got £850 a year. The Principal, in conclusion, congratulated the students on their good behaviour during the past session, and wished those who were leaving every prosperity in the career on which they had embarked. Dr. James Hunter proposed a vote of thanks to the Principal, which was supported by Professor Ivison Macadam.

I. "AN OLD STUDENT'S" £25 PRIZE—H. Kirby.

II. PRINCIPAL'S £20 PRIZE—W. Hepburn.

III. PATHOLOGY OF THE HORSE—
Highland and Agricultural Society's Silver Medal—W. A. Elder.
1st Class Certificate—H. Kirby.
2nd Class Certificate—R. Elliott.

IV. PATHOLOGY OF THE DOMESTICATED ANIMALS OTHER THAN THE HORSE—
Highland and Agricultural Society's Silver Medal—H. Kirby.
1st Class Certificate—W. A. Elder.
2nd Class Certificate—R. Elliott.

V. MEAT INSPECTION—
Principal's Silver Medal—H. Kirby.
1st Class Certificates—H. Kirby, W. A. Elder, J. W. Bee, F. Shippard, R. Elliott.

VI. GENERAL PATHOLOGY—
Highland and Agricultural Society's Silver Medal—Stanley Elley, R. Mairs (equal).
1st Class Certificates—C. H. Wadlow, R. Elliott, R. M. Jones.
2nd Class Certificates—J. W. Bee, R. Elliott, A. J. Macdonald

VII. MATERIA MEDICA—
Highland and Agricultural Society's Silver Medal—Stanley Elley.
1st Class Certificates—C. H. Wadlow, A. Barr.

VIII. HYGIENE—
Highland and Agricultural Society's Silver Medal—Stanley Elley.
1st Class Certificate—C. H. Wadlow.

IX. ANATOMY—
Highland and Agricultural Society's Silver Medal—S. H. Gaiger.
1st Class Certificates—H. E. Cross, J. B. Chadwick, H. A. Turner.
2nd Class Certificate—E. E. Elphick.

X. PRACTICAL ANATOMY—
Professor Duff-Dunbar's Silver Medal—S. H. Gaiger.

XI. PHYSIOLOGY—
Highland and Agricultural Society's Silver Medal—S. H. Gaiger.
1st Class Certificates—H. E. Cross, H. A. Turner, J. B. Chadwick.
2nd Class Certificate—E. E. Elphick.

XII. HISTOLOGY—
Dr. Hunter's Bronze Medal—S. H. Gaiger.
1st Class Certificates—R. Tindle, H. A. Turner, E. E. Elphick.
2nd Class Certificates—H. W. Robinson, J. B. Chadwick.

XIII. STABLE MANAGEMENT—
Highland and Agricultural Society's Silver Medal—H. E. Cross.

XIV. CHEMISTRY—
Highland and Agricultural Society's Silver Medal—H. R. Laycock.
2nd Class Certificates—R. F. Bett, J. Sheffield, C. Taylor.

XV. BIOLOGY—
Highland and Agricultural Society's Silver Medal—H. R. Laycock.
1st Class Certificates—J. Sheffield, R. C. Allinson.
2nd Class Certificates—R. F. Bett, J. Dodds.

XVI. JUNIOR ANATOMY—
Highland and Agricultural Society's Silver Medal—R. C. Allinson.
1st Class Certificates—H. R. Laycock, W. Catterall, R. F. Bett, J. Sheffield.
2nd Class Certificates—J. Dodds, C. Taylor.

XVII. PHYSICS—
Principal's Bronze Medal—R. F. Bett.
1st Class Certificates—R. C. Allinson, C. Taylor.

XVIII. DEMONSTRATOR OF ANATOMY—
Principal's Bronze Medal—Stanley Elley.

XIX. CURATOR OF MUSEUM—
Principal's Bronze Medal—K. P. Rankin.

XX. EDINBURGH VETERINARY SOCIETY'S SILVER MEDALS—
President's "Essay"—T. Walker.
Best "Essay"—H. Kirby.
Best "Communication"—T. Walker.

Royal (Dick) Veterinary College.

THE distribution of prizes to the students attending the Royal (Dick) Veterinary College during the session just closed took place on Monday afternoon in the Council Chambers, Edinburgh. Lord Provost Steel was unavoidably prevented from being present, and in the absence of any other member of the Corporation the chair was taken by Mr. Thomas Hunter, W.S., the Town-Clerk. Besides Principal Dewar and the other professors of the College, there was a large attendance of students and their relations.

The CHAIRMAN remarked that there never was a time when there was more demand for the services of skilled veterinarians in all departments of public life than there was to-day. The war in South Africa had brought out in a very emphatic way the need for skilled veterinarians. As the resources developed in a country like ours, a profession like that of the veterinary surgeon was bound to advance. He thought they were on the eve of a considerable development of veterinary education in this country, and he hoped the Government and their own city of Edinburgh would not be slow to give the aid which could be given alone by local authorities to the spread of veterinary education throughout the country. The chairman then presented the prizes to the successful competitors, as follows:—

CLASS A.

JUNIOR ANATOMY—
Silver Medal—Alexander Taylor.
Bronze Medal—C. W. Cartwright and George Taylor, equal.

THEORETICAL CHEMISTRY—
Cranston Gold Medal—C. W. Cartwright.
Silver Medal—W. Laing.
Bronze Medal—George Taylor.

PRACTICAL CHEMISTRY—
Bronze Medal—W. L. Richardson.

BIOLOGY—
Silver Medal—George Taylor.
Bronze Medal—Alexander Taylor and C. R. Chadwick, equal.

CLASS B.

SENIOR ANATOMY—
Anderson Gold Medal—T. T. Jack.
Silver Medal—W. J. Moody.
Bronze Medal—T. S. Rabagliati.

PRACTICAL ANATOMY—
Professor Bradley's Silver Medal—T. S. Rabagliati.

HISTOLOGY—
Bronze Medal—J. S. Bowden.

PHYSIOLOGY—
Turnbull Gold Medal—T. S. Rabagliati.
Silver Medal—T. T. Jack.
Bronze Medal—A. E. Massey.
Professor Farquharson's Special Prize—Ade. R. Gordon.

STABLE MANAGEMENT—
Silver Medal—J. S. Bowden.
Book Prize—W. J. Moody.

CLASS C.

PATHOLOGY AND BACTERIOLOGY—
Harris Gold Medal—R. E. Montgomery.
Silver Medal—R. Murray.
Bronze Medal—J. G. Cattell.

HYGIENE AND DIETETICS—
Silver Medal—Colin Cameron.
Bronze Medal—W. K. Barron.

MATERIA MEDICA—
Silver Medal—R. H. Ripley.
Bronze Medal—R. E. Montgomery.

CLASS D.

SURGERY—
Dollar Gold Medal—J. D. Whitty.
Silver Medal—G. E. Anderson.
Bronze Medal—M. Purcell.

MEDICINE—
Dryburgh Gold Medal—J. D. Whitty.
Silver Medal—G. E. Anderson.
Bronze Medal—T. B. Redding.

OBSTETRICS—
Silver Medal—J. D. Whitty.
Bronze Medal—G. E. Anderson.

CLINIQUE—
Silver Medal—Geo. E. Anderson.
Bronze Medal—Edward Dunstan and M. Purcell, equal.
Macfarlane Medal (best aggregate)—George E. Anderson.

College Bursary of £21—George E. Anderson.

Edinburgh Veterinary Medical Association Silver Medal for Best Essay—James Forbes.

Edinburgh Veterinary Medical Association Silver Medal for Best Communication—Frank H. Leech.

Principal DEWAR said they had arrived at the end of the most successful session they had had with fourth-year students. They had given a very good account of themselves in the percentage of marks which they had obtained in their respective examinations. The prospects for their profession at the present moment were looking fairly bright. They were not going to flatter themselves too much, because no one knew what was hidden in the womb of futurity, but at the present moment there was a better demand for veterinary surgeons than ever he had seen hitherto. He was sorry to say that within the past few months a feeling of estrangement, as it were, had crept in between the veterinary profession and the War

Office. When he asked those who had been in South Africa whether they would care to go back, some simply shook their heads, others gave a decided no, and several said that if they went back they would go in the ranks. They did not seem to think they had got justice out in South Africa, and he regretted it very much, but they could hardly wonder at it, when they found combatant officers, manifestly incompetent for their own work, appointed as inspectors of veterinary hospitals. Unless something was done speedily to remove this state of matters, he had not the least doubt the horses would suffer in the first place, the army would suffer in the next place, and the country would have to pay. He hoped steps would be taken to remove this feeling of soreness and injustice, and that their profession and the War Office would, in a very short time, be working as cordially and as harmoniously as ever they had done in the past.

Royal College of Veterinary Surgeons.

EXAMINATION PAPERS, 1902.

CLASS A.—EXAMINATION, 16th May 1902.

CHEMISTRY AND ELEMENTARY PHYSICS.

1. Define specific gravity. A solid of irregular shape weighs 120 grains in the air and 72 grains in water; find its specific gravity. How would you ascertain the specific gravity of some small-shot?

2. How is the metal potassium obtained? Given some metallic potassium, how could you prepare successively potassium hydrate, potassium bicarbonate, and potassium acetate. Give equations.

3. What is a substitution compound? Give the composition of nitrobenzene, aniline, and chloroform, and state why each is regarded as a substitution compound. Describe the preparation of one of them.

4. The latent heat of water is 80, and the latent heat of steam 536. How many heat units required to convert 8 grammes of ice at 0° C. into water, and finally convert the water into steam at 100° C.? Explain clearly the meaning you attach to the term latent heat.

5. By what tests can you identify lime, calcium carbonate, potassium chlorate, sal ammoniac? State also how to distinguish quicklime from slaked lime, and a chloride from an iodide.

6. Trace the steps and briefly describe the operations by which ethyl ether may be got from starch. Give equations.

BIOLOGY.

1. Give the scientific name of any mammal with which you are acquainted, and state, with reasons, the sub-kingdom, class, and order to which the animal you select belongs.

Why should animals receive scientific as well as ordinary names?

2. How do an earthworm, a tapeworm, a cockroach (*or* butterfly, *or* bee), and a garden snail (*or* slug), agree with or differ from one another in regard to—

(*a*) Food and way of feeding;
(*b*) Breathing organs, and way of breathing;
(*c*) Mode of reproduction?

3. What are the chief differences between a typical fish, a typical amphibian, and a typical bird, as regards—
(*a*) Digestive organs;
(*b*) Breathing organs, and way of breathing;
(*c*) Organs of circulation?

4. How do stems differ from roots in the following particulars—
(*a*) The structure of the apex?
(*b*) The arrangement of the vascular bundles?
(*c*) The mode of increase in thickness?

5. Give an account of the natural order Umbelliferæ. Mention three poisonous plants belonging to this order, and explain, as far as you can, how you would recognise them.

6. When a plant is removed from the soil and placed in a warm room it withers. Explain this as fully as you can.

ANATOMY.

1. Name the ligaments, and give their attachments, of the atlanto-axial articulation of the horse.

2. State the distinguishing features of diarthrodial joints; mention the sub-divisions, and give an example of each.

3. Describe the sacrum of the ox, sheep, pig, and dog.

4. Give a short description of the stifle joint of the horse.

5. Describe the seventh cervical vertebra of the horse, and compare it with that of the ox.

6. Compare, briefly, the bones forming the digits of the horse, ox, pig, and dog.

CLASS B.—EXAMINATION, 16th May 1902.

ANATOMY OF DOMESTICATED ANIMALS.

1. Give the situation, origin, and relations of the left common carotid artery in the horse. State how its origin differs in the dog.

2. Give the situation, relations, attachments, and nerve supply of the following muscles:—
(*a*) Triceps extensor cubiti.
(*b*) Flexor pedis perforans.
(*c*) Scalenus.

3. Give the origin, situation, relations, and distribution of the following:—
(*a*) The anterior radial artery.
(*b*) The anterior tibial artery.
(*c*) The external plantar nerve (fore limb).

4. Briefly describe the bony sinuses in the head of the horse.

5. Describe the stifle joint of the horse.

6. Give the origin, course, and distribution of the eighth cranial nerve.

N.B.—Of the four questions to be answered in this paper, two must be Histological and two Physiological.

HISTOLOGY AND PHYSIOLOGY.

Histology.

1. Draw and describe fully the structure of—
   (*a*) Areolar tissue.
   (*b*) Tendon.
2. Draw and describe the high power view of—
   (*a*) The thyroid gland.
   (*b*) The thymus gland.
3. Draw and describe the appearances presented by a transverse section through the spinal cord in the dorsal region, when examined under the low power.

Physiology.

1. How are the changes in intra-thoracic pressure brought about, and how do they affect the arterial and venous blood-pressure?
2. By means of what instrument can you obtain a curve of the pulse? Draw and describe the instrument, and the tracing obtained by it.
3. How is the normal temperature of the body maintained? In what respects does a warm-blooded differ from a cold-blooded animal?

CLASS C.—EXAMINATION, 16th May 1902.

(*Numerical calculations to be shown in full. Diagrams may be used.*)

VETERINARY HYGIENE AND DIETETICS.

1. Describe the best method of weaning a foal.
2. Discuss the relative values of distillers' and brewers' grains as a food. To what animals, and with what special objects, are they usually given?
3. Describe a typical foaling-box.
4. What sort of water has the most dangerous action, from a sanitary point of view, on lead pipes?
5. What do you understand by "the bacteriological process" for the purification of sewage?
6. What dangers are to be feared from the use of portable stoves for warming purposes? Is there any class of animal particularly sensitive to such influences.

MATERIA MEDICA, PHARMACY, THERAPEUTICS, AND TOXICOLOGY.

1. Define the terms antiseptic, vermicide, cholagogue, hypnotic, myotic, and errhine. Give three examples of each.
2. How are the following prepared? Magnesium sulphate, iodoform, chloroform. What are the therapeutic properties of each?
3. Give the official preparations of mercury, with doses of each, for a cab-horse and a full-grown terrier dog respectively. What are the symptoms of mercurial poisoning and the antidotal treatment?
4. Name the diuretics used in practice for horses, cattle, and dogs. Give doses of different preparations for each class of animal, and explain action.

5. What antidotes would you prescribe in poisoning by following:—Aconite, belladonna, corrosive sublimate, and carbolic acid, giving reasons for your selection.

6. Write prescriptions for following:—

(*a*) Febrifuge for horse, cow, and dog.
(*b*) Refrigerant lotion for horse.
(*c*) Astringent mixture for cattle.

MORBID ANATOMY, PATHOLOGY, AND BACTERIOLOGY.

1. What is meant by anæmia? Mention the changes which it produces in the blood and tissues. How does it differ from the condition of leukæmia sometimes met with in horses, oxen, dogs, and other animals?

2. Define and give examples of (1) a neoplasm or tumour, (2) hypertrophy. Have they any common cause, and is it always possible to distinguish hypertrophy from tumour formation?

3. What is the disease known as "blackleg"? What animals does it affect, and what characteristic changes does it produce? How may immunity from it be procured?

4. Give an account of the morbid changes found in rickets. Discuss briefly the views held as to its ætiology.

5. Describe the microscopical changes found in the lung in catarrhal pneumonia.

6. Acute endocarditis.

(*a*) Describe the macroscopical and microscopical appearances in the heart.
(*b*) Indicate the immediate and remote effects which may result in the vascular system and in the viscera.
(*c*) Enumerate the organisms which you know to have been observed in this condition.

CLASS D.—EXAMINATION, 16th May 1902.

PRINCIPLES AND PRACTICE OF VETERINARY SURGERY.

1. What is the normal condition of the umbilicus at birth? What attention (if any) is advisable at this time? Name any abnormal conditions, and the probable effect of them, in the young animal.

2. Describe how you would administer chloroform to a horse and a dog for an operation likely to last half-an-hour.

3. Under what circumstances is hoof section (sawing or grooving the foot) indicated as likely to be beneficial? Describe the operation and the after-treatment you would adopt.

4. What are the causes, symptoms, and probable results of phlebitis? What treatment would you adopt.

5. In severe laceration of the tongue, with hæmorrhage, state the measures you would employ to stop the bleeding, and the general treatment you would advise locally, and otherwise.

6. Describe the symptoms produced by a fracture of the upper third of the first rib in a horse.

7. What is a wart? What are the parts of the body most commonly

affected in the horse? What class of wart is most objectionable? Name treatment, and say whether you consider them of importance as a question of soundness.

8. State shortly the causes, symptoms, and treatment of the foot-rot in sheep.

PRINCIPLES AND PRACTICE OF VETERINARY MEDICINE.

1. What are the most common affections of the respiratory organs which occur during an outbreak of equine influenza? Discuss their differential diagnosis, and the treatment to be especially directed to their relief.

2. What are the several conditions, either of which would warrant an inspector of meat in the condemnation or total seizure of a tubercular carcase?

3. Give as full an account as possible of the causes, symptoms, and post-mortem appearances of parasitic muco-enteritis (strongylosis) in young horses (colts and fillies). Indicate your treatment and the preventive measures which you would recommend.

4. Discuss "Septicæmia."

5. Describe the disease known as "cow-pox," its etiology, symptoms, and treatment. What steps would you take to combat an outbreak?

6. State the causes and describe the symptoms of the condition known as "the lamb disease." At what period of the year is it usually met with? What preventive measures would you recommend?

7. Discuss chorea in the dog, its etiology, symptoms, prognosis, and treatment.

8. What are the causes, symptoms, preventive and other treatment of rheumatism in the pig?

For Number of Questions to be answered see No. 5 of General Directions for Candidates.

Original Papers.

CASTRATION.

BY E. WALLIS HOARE, F.R.C.V.S.

THE operation of castration appears to be regarded as one of vast importance in veterinary surgery. Nearly every practitioner fancies himself an expert on the subject, and proclaims that his method is superior to all others. Some, with an exaggerated idea of their own skill, tell us that so successful are they at the work that no colt ever dies as the result of their operation.

At one time, in the simplicity of youth, we used to regard such individuals with awe, and a touch of envy at their success and our misfortune when a case slipped through our fingers, and we got the credit of slaying the animal. But as years rolled on we gradually learned that these successful men had similar experiences to our own, with this difference, however, that in our case we attributed the cause of death to the operation, in their case it was a calamity resulting from some disease that was lurking in the system prior to the operation. And not only this, but, *mirabile dictu*

they were able to persuade the owners that such was the case, while our reputation was hanging in the balance, and we were anathematised as having caused the death of the rent-payer of the farmer or the pride of the widow. Indeed, not so long ago we saw it reported that the cause of death in one case that succumbed was the attempted swallowing of the testicle that was left in the animal's stall!!

One would imagine that some great surgical skill was required in the operation if we consult recent works on veterinary surgery. In a work recently issued we find no less than thirty-nine pages devoted to this operation, different methods being given, and plates of instruments, and some implements belonging to a former age. For such a simple operation it is surprising how much space is occupied, and what a number of barbarous methods are described. We beg to assert, however, that a student would learn everything about the operation after assisting a practitioner of modern views, and that he might read the descriptions given in the thirty-nine pages *ad nauseam*, and be totally unfit to castrate even a donkey.

Let us for a moment inquire into the essentials of the operation. In normal cases the proper securing of the spermatic artery, in order to prevent hæmorrhage, and the after-treatment, which consist in measures for the prevention of septic peritonitis and tetanus, comprise the important details.

That the operation, by whatever method employed, is a simple one, is apparent when we consider the large number of animals mutilated by empirics, and the small percentage of fatal results. As regards fatal results and untoward complications, the element of chance enters very largely. Sometimes even with the greatest care a fatal result will occur, and no one is to blame. Again, we find that, as a rule, cases do better when on grass every day than under the best hygienic surroundings and surgical care in town, of course provided the weather is suitable.

As to the method of operation, modern practitioners prefer one on surgical lines. Certainly the antiquated clam and the hot iron are not in accordance with modern surgical ideas, in spite of the dogmatic assertions of those who pin their faith on ancient methods. The method by torsion and that by ligature are both scientific and surgical, and our experience of the former leads us to state that it is perfectly safe and expeditious. We do not, however, agree with the illustrations given of this method in modern text-books, as it is essential to apply the torsion forceps as close as possible to the surface of the clamp, in order to operate in as short a time as possible, and to avoid leaving a quantity of bruised tissue behind. Some of the instruments illustrated in works on veterinary surgery are exceedingly crude for this operation.

The hot iron and the clam have a strange fascination for many practitioners. These barbarous methods are adopted by the travelling castrators, we presume, in consequence of a superstitious belief in their efficacy and in the simplicity of their manipulation. The qualified man, however, should not be influenced by such considerations.

It has been stated that the results of the hot iron are more favourable than those by other methods; but we would like to inquire how such results are arrived at, as we are not going to accept the *ipse dixit* of the individual on the matter, or draw conclusions from his results of the different methods of operating.

The devotee of antiquated surgical methods resents violently if his deductions and handiwork are criticised; but as "old customs die hard," we are not surprised at this.

Veterinary surgery is bound to progress with the times, and not lag behind to follow in the trail of human surgery. As an example, we may mention the employment of chloroform, which, although by no means as largely used in veterinary surgery as it should be, still, aided by the humane owners of animals, its use is becoming more general. We take it as a sign of the times when owners of animals insist on the employment of anæsthetics, but we do not consider it altogether to the credit of the profession that such a request should be necessary.

With regard to castration, we were told more than once during a long paper discussion that it would be impossible to carry out anæsthesia, and the most trivial excuses were put forward. What was the result? Every excuse that was mentioned was proved to be imaginary, and any one who has operated with the patient under chloroform will continue to use it. Prejudice and a want of practical knowledge of the employment of anæsthetics are the real causes for their use not being general. So long as prejudice exists, a want of knowledge is sure to continue, with its attendant train of erroneous ideas.

A long experience of the method of castration by torsion enables us to draw attention to some important details in connection with the operation. We do not claim that no unfortunate sequelæ follow this method: as we have already remarked, the element of chance enters largely into the results, no matter what method be adopted. No doubt the condition of the animal has a great deal to do with the results; if his constitution be sound and fit, he has a far better chance of doing better than under the opposite circumstances. After all it is simply a question of the healing of the end of the spermatic cord and of the operation wounds; and, just as in wounds of other regions, if the animal's constitution be unhealthy or out of condition, and if the surroundings are unfavourable, we cannot expect satisfactory results.

Aseptic castration we look upon as impossible under existing circumstances and conditions. No doubt attempts may be made to bring about such a fortunate state of affairs by those who are not engaged in the routine of daily practice; descriptions of the attempts also serve to embellish the chapter on castration in works on modern veterinary surgery.

While we can never hope to perform this operation under conditions similar to those in human surgery, and with the same results, still we must as far as possible pay attention to antisepsis and surgical cleanliness. We can at least have our instruments aseptic by taking the precaution of placing them in boiling water; we can also have the instrument tray aseptic, and the vessel containing the antiseptic solution in a similar condition; we can to a certain extent disinfect the skin and surrounding parts of the field of operation; and, last but not least, we can render our hands aseptic.

Next comes the great difficulty and drawback to our efforts, viz., the surroundings and the attendant. Our experience has been, that provided the weather be favourable the animals are far better on grass than in the best-formed stable, also that the less handling they receive from the attendant the better. Of course no hard and fast rule can be laid down on the subject, and while some give no trouble, without any attention from the attendant, others require to be looked after. With very few exceptions do we find buildings which are fit to accommodate surgical cases, certainly not in country districts where the majority of colts are housed after the

operation. Many are filthy in the extreme, and even the aid of a Hercules would not render them clean enough to satisfy our minds. Still we have to make the best of our surroundings, and endeavour to have them cleaned and disinfected as far as possible. As regards the ordinary farm attendant's hands, we imagine that even prolonged boiling would hardly sterilise them. Under such circumstances we cannot be surprised when bad results of the operation follow, a combination of dirt and rough handling being opposed to natural healing.

Taking everything into consideration, we may state that the results obtained are very satisfactory, and that the unfavourable sequelæ to which we shall shortly refer can to a great extent be minimised or prevented. Given an animal in healthy condition, and surroundings as favourable as can be expected, the next important point is with reference to casting for the operation. Of course all necessary precautions must be taken, as in casting for any operation. We may state that we prefer casting with small-sized hobbles, and performing the operation with the animal lying on the side, the uppermost hind leg being released from the hobble and secured towards the shoulder by means of a side-line. Needless to say, we administer chloroform to animals of all ages, and have no trouble, danger, or anxiety from its use. Next with reference to the instruments. We use a special clamp, with edges that fit accurately like an artery forceps. The testicle is exposed in the ordinary way, the so-called non-vascular portion of the cord is severed by means of a pair of scissors with serrated edges. This precaution prevents hæmorrhage from the small testicular artery. The clamp is then fixed on the vascular portion of the cord as high up as possible, without dragging on the latter, and the instrument is closed as tightly as possible. The torsion forceps are then applied, and if the testicle be large it is removed a short distance from the forceps. We apply the forceps as close as possible to the surface of the clamp, and then rotate the forceps slowly and regularly, the first few turns being more rapid; by this means no bruised tissue is left behind, and the operation is more expeditious. We never permit an assistant to hold the clamp, as we can do so ourselves, and perform torsion with facility. The important matter is to avoid any dragging on the cord.

In the case of yearlings, if we operate in the country we leave them on the grass at once, provided the weather is favourable; of course, they are housed at night for a variable period. In two-year-olds and upwards we keep the animals inside until next day, then leave them on the grass, and make certain they have at least an hour's exercise daily. The importance of daily exercise cannot be over-estimated.

The sequelæ of castration we are all unfortunately too well acquainted with.

Hæmorrhage, either primary or secondary, will sometimes occur in spite of all precautions. Although we have never known a case that terminated fatally as the result of hæmorrhage, still it is our experience that colts which bleed after the operation do not progress favourably, and frequently develop other sequelæ. The source of the hæmorrhage is not always easy to discover, but in yearlings we have often observed that the small testicular artery is very well developed, and we are of opinion that the hæmorrhage arises from this vessel. If this portion be severed by means of a serrated scissors instead of a knife, there will be practically no hæmorrhage. In weak yearlings we have found it of advantage to place the entire cord in

the clamp, and sever the non-vascular portion on the surface of the instrument before applying the torsion forceps. It is rare to encounter hæmorrhage immediately after the operation; of course, some animals bleed more from the scrotal incisions than others, but this soon ceases.

It is hæmorrhage occurring from two to six hours after the operation that is likely to cause trouble. As regards its suppression, much depends on circumstances. If the bleeding be only slight, the application of cold water may help to bring about a spontaneous cessation; but if profuse, especially with evidences of arterial bleeding, we must resort to plugging the canal, and the best material is carbolised tow pushed in firmly in pledgets. This has always succeeded, but we must admit that next morning there is always enormous swelling, and a tendency for a recurrence of the hæmorrhage when the pledgets are being removed. It is astonishing the tendency to hæmorrhage possessed by some animals; we have seen intermittent hæmorrhage to last for three days, and recur in a continuous drip every time the pledgets of tow were removed. One important detail is not to allow the packing to remain in too long, as it very quickly becomes septic. At the same time care is required in removing it. One of the most troublesome cases of bleeding we ever encountered was when acting as assistant. The animal, a large yearling, was castrated the previous day by another practitioner. By chance we happened to be passing by, and found the groom in a great state of alarm; the blood could be heard gushing in a firm stream. No appliances were at hand, and not even tow or wool. We came across some alum and dissolved it in cold water, and applied same diligently, and sent to town for the operator. When he arrived the hæmorrhage had ceased spontaneously, and the animal made a good recovery, although having lost a large amount of blood.

It is a point worthy of note that in bleeding after castration the animal generally keeps the hind legs moving and frequently disturbs the clot, and so favours a continuance of the hæmorrhage. When hæmorrhage does occur it is absurd to attach blame to the operator; in spite of every precaution it will occur in some instances, and we believe that a similar result would ensue from a wound in any other part of the body.

We are aware how profuse is the hæmorrhage in some animals after the operation of docking, and how difficult is its suppression. If asked what suggestions we would give in the prevention of this annoying sequel, we would say:—

First. Avoid exciting the animal before operation, and have him cast as quietly as possible.

Secondly. In weak animals, take especial care in twisting the spermatic artery, and in every instance see that the animal gets an opportunity of rising without knocking himself about. Do not walk him immediately after the operation, but keep him at rest so as to give the arteries a chance of being properly sealed. On no account permit an animal to be walked home the same day if it is any distance. The owners of animals usually exaggerate the extent of bleeding, and become very much alarmed at a small amount of bleeding. Our experience teaches us that in many instances the bleeding will cease spontaneously without any plugging, and the latter is certainly to be avoided if possible.

In our next article we shall consider some more sequelæ of castration.

STOMATITIS PUSTULOSA CONTAGIOSA.

BY HENRY TAYLOR, M.R.C.V.S., NEW VETERINARY COLLEGE, EDINBURGH.

STOMATITIS pustulosa contagiosa is not a common disease in this country; at any rate it is very rarely met with in Scotland. Quite recently, however, we met with a few cases amongst the stud of one of our clients, the outbreak being due to the importation of a new horse bought from an Edinburgh dealer. This new horse was brought into the stable on March 24th, and was examined for soundness at the College on the 25th. At that time he was noticed to be suffering from nasal catarrh, though nothing was observed wrong with his mouth when his age was being examined. On March 29th we were requested to attend this horse because he had gone off his feed, and then we found that he was suffering from stomatitis pustulosa contagiosa. The stableman was made aware of the extreme contagiosity of the disease and asked to take preventive measures, and as the horse was that day returned to the dealer for another reason, we thought that that would be the last of the outbreak.

However, on the 5th of April, just one week after the before-mentioned horse had left, we were called to a bay gelding which was reported as not feeding. On examination this also proved to be a case of contagious pustular stomatitis, and as we had an opportunity of watching this case, perhaps a few remarks thereon may be interesting, though at the same time there is nothing to add to what is found in the text-books on the subject. The symptoms presented at this date (5th) were as follows. The mucous membrane of the mouth was reddened and pimply elevations could be seen at various points; they could also be felt by passing the finger over them. At other points the pimples had gone a stage further and become converted into pustules. These pustules were acuminated and the apex enclosed a drop of whitish or yellowish matter. Their bases were about the size of a lentil, and the pustules projected about three-eighths of an inch above the surface. In some places the pimples were collected together in groups, in others there were only two or three. The parts of the mouth chiefly affected were the inside of the upper lip, the buccal membrane just behind the lower canine teeth, and the gums above the upper canine teeth. In addition, the lower lip had on its inside one or two pimples, one was on the tongue, and there was a pimple on each side of the mouth on the skin. The animal objected to having his mouth examined. The submaxillary lymphatic glands were enlarged and painful, but not adherent to the bone. The parotid glands (salivary) were also swollen but not painful. There were no ulcers in the mouth at this stage, and there were no catarrhal symptoms. The nasal mucous membrane was injected. The animal could not masticate his ordinary food, which consisted of a mixture of crushed oats, cracked maize, and chaff, at least he did so very slowly, and then he salivated a great deal, but he ate bran mash with avidity. His general health was not affected. The temperature was not taken on the first day, but the pulse was 48. During the next few days the temperature and pulse fluctuated a little, but neither were very much disturbed. The respirations were normal throughout. Here are the figures :—

April 6th.	Pulse 36	Temperature 102·6
7th.	„ 40	„ 103
8th.	„ 48	„ 101

April 9th.	Pulse 38	Temperature 101
10th.	„ 36	„ 103
11th.	„ 36	„ 99·8
12th.	„ 36	„ 99·8
13th.	„ 44	„ 99·6
14th.	„ 44	„ 100
15th.	„ 36	„ 99·6

On the 10th (that is five days after the mouth lesions were first observed) most of the pustules in the mouth had burst and formed shallow ulcers, the diameter of which was about that of a pea. In some places, by confluence of two or more pustules, the ulcers were larger. Each single pustule, when it burst, accounted for a round ulcer, but where there had been more than one the shape of course varied. These ulcers were not deep, merely extending through the epithelium; their bases were red (hyperæmic) and their edges formed by whitened epithelium. At this date (10th) although the ulcers predominated, there were still a few pustules. The pimples took about four days to form the conical pustules, and, as seen above, the pustules in five days were changed into ulcers. There were several pustules and ulcers on the skin of the lips, but the Schneiderian membrane was unaffected. The submaxillary glands were still enlarged and sore at this date, and the parotid glands also swollen.

On the 15th many of the ulcers had healed, but there were still perhaps half-a-dozen remaining. The submaxillary glands were a little enlarged. On the 16th the animal began working, though there were still one or two ulcers to be seen. This was eleven days after the disease was observed in him. We did not see the horse again till the 27th, but he was then quite free from the disease.

During the outbreak, notwithstanding precautions, one more horse became affected. The treatment adopted was simply the administration of a little chlorate of potash in the drinking water, and the feeding of the affected animals on soft food.

Remarks.—The period of incubation is not given in the text-books, but we see that the first case presented pustules in his mouth exactly seven days after the dealer's horse was found to be affected. The horse which became affected from the dealer's horse did not stand next to him, nor did he occupy the stall rendered vacant by the departure of the latter. I am unable to speak as to the method of infection, but the horses were watered out of a common trough, and that is most likely how the disease spread.

We are informed by Principal Owen Williams that the last outbreak of stomatitis pustulosa contagiosa he remembers in Edinburgh occurred some eighteen years ago at Piershill Barracks, and it was then confounded with glanders.

On the 8th of May we examined another horse from the dealer who supplied the horse which was the origin of the outbreak, and it also was affected.

MOLASSES AS A FEEDING-STUFF.

In opening a discussion on this subject at a meeting of the Société Centrale, M. Cagny mentions the fact that for some time past the agricultural world had been experimenting on the use of molasses as a feeding-stuff for domestic animals, but no authoritative statement had come from

the professional journals. All that was known was that a certain farmer had successfully fed broken-winded horses with a mixture containing molasses. He reminded his hearers that certain kinds of molasses are very rich in potassium salts, and for this reason may become dangerous when given daily in large quantities. Discussing the commercial aspect of the question, M. Cagny said that dealers sometimes mix molasses with fine chopped hay or straw, or with crushed grain, and occasionally with waste oil-cake or even peat, for the purpose, as they say, of rendering transport easier and preservation more complete. But owners of stock must be on their guard against such mixtures, and see that their feeding properties have some relation to their price.

M. Sanson said that manufacturers of sugar, by reason of the over-production which was going on, found it difficult to sell their product at remunerative prices, and had turned their attention to the utilisation of by-products in the shape of molasses for the feeding of cattle. Much had been said of the feeding value of sugar and consequently of molasses, which contains 48·50 per cent. of sugar. But molasses must be considered from other points of view than its percentage of sugar. It contains in addition 12 per cent. of organic matters, which also have their nutritive value. It contains also salts, principally salts of potassium, as stated by M. Cagny, which vary in proportions accordingly as the beetroot, from which the sugar is extracted, comes from one part of the country or another. These salts are undeniably toxic in their effects, but the small proportion which finds its way into the food of cattle is not likely to do much harm. As a rule cattle are very fond of molasses as a condiment, and this is its principal value as a feeding-stuff. With the help of molasses we can induce cattle to consume even damaged food-stuffs or stuffs for which they show otherwise no relish. As for nutritive value we ought to know, before pronouncing an opinion, whether by its addition to the ordinary rations, and just on account of the ease with which the sugar it contains is osmosed in the intestine without needing to undergo digestion, it does not interfere with the utilisation of saccharifiable matter contained in the rations. Molasses must never be given alone, but may accompany normal rations containing nitrogenous matter, fatty matter, non-nitrogenous extractives, and raw cellulose, in order to insure the necessary volume. A good deal has been said in disparagement of the mixture of molasses with peat, the principal objection being the non-nutritive character of peat, but it must be remembered in the first place that the transport of raw molasses is very difficult, and secondly, that the Omnibus Company of Paris have obtained very good results from the use of the compound—which in France is a patent article. M. Sanson concluded by saying that he considered the price of these preparations too high in proportion to the real feeding value.

M. Lavalard, veterinary surgeon of the Paris Omnibus Company, continued the discussion. He said that last year, owing to the high price of grain, he turned his attention to compounds of molasses. He was encouraged in this attempt by reports of the success obtained in the German, Austrian, and Russian armies by Dr. Schwartz's compound of molasses and peat-moss, which he designated "Molassine." He had also seen the certificate from the commanding officer of the 7th Dragoons (English). A firm of sugar refiners, Messrs. Say, had acquired the German patent right, and furnished a product containing 37 to 40 per cent. of sugar, and composed of 80 to 86 per cent. of molasses, and 14 to 20 per cent. of moss. The following is the chemical analysis:—

Water, ...	19·00	per cent.
Nitrogenous matter, . .	9·77	„
Amylaceous „ . .	53·81	„
Fatty, „ . .	·34	„
Mineral, „ . .	9·31	„
Cellulose, „ . .	7·77	„
	100·00	„

Sugar, 39·61 per cent.
Matter insoluble in water, 16.36 per cent.

On 7th July 1901 experiments were made with twenty-four horses, to which about a pound of the mixture was given in place of the same quantity of corn; this was increased to 2 lbs., then to 3 lbs. The horses took to the mixture at once, and even became fond of it, so that the use of it was gradually extended in view of the economy to be thereby effected. At last all the company's horses to the number of some 15,000 got a ration, some 2 lbs., others 3 lbs., others 4 lbs. As a result, M. Lavalard found that the number of colic cases greatly decreased, and there was no case of diarrhœa. Further, it was found that 2 lbs. of the turf-mixture did the work of 2 lbs. of corn-mixture (oats, maize, beans), and not only that, but the animals left nothing over of their rations, which they had never done before. According to his usual custom, M. Lavalard continued experimenting on his first twenty-four horses by increasing the molasses ration, and since December last these animals have been getting 6 lbs. of the mixture in place of the same quantity of mixed corn. They are weighed every week, and it is found that there is practically no variation. The amount of work they accomplish remains unchanged. M. Lavalard dealt with the question of the alleged depressing effect of moss on the digestion of other food-stuffs given along with it. All mosses are not suitable for mixing with molasses. It is principally peat-moss which can be employed. This acts by its natural properties on the saline matters, and prevents them from absorption by the intestines. It serves the double purpose of vehicle for the nutritive substance (sugar) and of corrective to the hurtful properties of molasses. Peat moss is spongy by nature, and free from dust and earthy matter; it is rather by its greater volume than by its degree of dryness that it is fitted for the absorption of liquids. Certain specimens were found to contain 8 to 18 per cent. of water, and some so much as 30 to 36 per cent. The humic acid and tannin of the moss neutralises the alkaline salts of molasses to the point of rendering them harmless; further, its absorptive power permits the mixture of twenty parts of it to eighty parts of molasses as a minimum. Thus a product is obtained containing 40 per cent. of sugar, and uniting the advantages of easy handling, easy transport, and preservability. The best moss seems to come from Holland and North Germany. The Board of Agriculture has frequently urged upon the French Chambers of Commerce the importance of investigating the beds of peat-moss in their neighbourhood, and experiments have been extensively made, but the results show that French moss has not the absorbing powers of other mosses, that the residuum in ashes is greater, and that the quantity of humic acid is very small.

M. Lavalard went on to say that the United Agricultural Societies of Göttingen had made extensive experiments with moss and molasses mixture,

and reported as follows—(*a.*) We may without danger or inconvenience introduce into the daily rations of a horse at least 2 lbs. of molasses-moss mixture of good quality (20 per cent of moss and 80 per cent. of molasses; (*b.*) to this extent at least the mixture is an effective substitute for oats of good quality; (*c.*) by this substitution the general condition of the horse (muscular force, working energy, health) not only remains perfect, but the coat becomes better and more glossy; (*d.*) in the case of horses subject to colic and indigestion, such attacks become rarer and more benign, and finally disappear.

M. Lavalard concluded by stating that the ration which gave the best results for horses weighing 10 to 12 cwts. was—

A mixture of oats, maize, and beans, .	15 lbs.
Molasses mixture, . . .	4 „
Chopped straw, ...	6 „ to 8 lbs.

This ration costs about 1s. 5d., whilst the old-style ration of oats, hay, and straw would have cost 2s. to 2s. 6d.

(*Recueil Vétérinaire*, 30th April 1902.)

DISEASES OF THE MAMMARY GLAND.

BY P. LE BLANE, PROFESSOR AT LYONS VETERINARY COLLEGE—TRANSLATED BY COLONEL NUNN, A.V.D., F.R.C.V.S., ETC.

ANATOMY.

THE mammæ are the glandular organs of the mammiferæ that secrete milk for the sustenance of the young animal. Their number, situation, size, and shape varies in the different species. I propose first to give a general description of the organ, and afterwards describe the variations that occur in the different domestic animals.

The mammæ are present in both sexes, but only developed in the female, the number, situation, connection, and shape differing in each species of animal. They are composed of (1) skin; (2) a subcutaneous layer of cellular and adipose tissue; (3) an elastic and fibrous layer; (4) the parenchyma of the gland proper.

1. The skin calls for no special remarks.
2. The cellular adipose tissue is merely the conjunctive tissue that unites the gland to the skin. It gives off processes into the gland tissue, together with the fibrous elastic layer. This layer does not extend below the teat.
3. The elastic fibrous layer is in connection with the cellular adipose, and forms a separate envelope for each gland. The larger the gland is the greater the number of elastic fibres present. In the mare this envelope is of a yellow colour, in the other domestic animals nearly white.
4. Parenchyma.—The mammæ are racemose glands composed of a series of lobules, which in their turn are made up of cul de sacs and acini. The lobules are in connection with the excretory canals, which at first are intra, afterwards extra-lobular. The lobules are united to each other by a connective stroma, in which the vessels ramify.—(*Vide* Histology.)

5. Excretory apparatus consists of *a*, lactiferous ducts; *b*, galactopherous sinuses or reservoirs; *c*, the excretory or mammary canals.

The lactiferous ducts commence in the gland vesicles, and unite, ultimately emptying into the galactopherous sinuses. The galactopherous sinuses are cavities at the base of the teat, into which the lactiferous ducts converge. It is lined by a fine mucous membrane—that is, arranged in more or less developed folds.

The teats are the organs designed for the support of the young by suction of the milk, and are adapted for that purpose. They are hollowed sometimes with one large tube, in other cases with a number of smaller ones running parallel to each other. Above the tubes open into the galactopherous sinuses, and below at the extremity of the teat by one or more openings. The opening of the tubes is surrounded by the skin and bundles of connective, elastic, and muscular tissue are disposed in rings round it. This tissue, by reason of its tone and elasticity, fulfils the part of a sphincter, preventing the escape of the milk, and thus allowing it to accumulate in the sinuses.[1]

MAMMÆ OF THE MARE.

The mare has two mammæ situated in the inguinal region, with the two conical shaped teats, provided at the free extremity with two orifices. The skin is thin and black or marbled, and covered with fine hair. Each gland is attached to the abdomen by two suspensory ligaments formed of elastic fibrous tissue. The lactiferous ducts open into the galactopherous sinuses, which are always two, and sometimes even more in number, and which communicate with each other.

MAMMÆ OF THE COW.

The mammæ of the cow are composed of four quarters, from each of which depends a long teat. The four quarters are united together in pairs, and are arranged symmetrically. In some cows there are two supplementary teats on the posterior portion of the gland. Usually they are unprovided with a duct or gland tissue, but in certain cows they are fully developed, being provided with an excretory duct, and giving a few drops of milk.

The duct is in the cow straight, and the teat is in the form of a truncated cone, about two-and-a-half to three inches long. It is devoid of hair, and either sebaceous or sudoriparous glands.

There is a single galactopherous sinus into which all the lactiferous ducts empty themselves. The lining mucous membrane of the sinus is arranged in folds, and at the bottom of each are small acini. There are a considerable number of muscular fibres arranged around the excretory canal, and extending some way up the base of the sinus. The mucous membrane lining the excretory canal has no glands, and is of the squamous variety.

In the teat are a number of circular muscular fibres round the canal that have been described as sphincters.

Each teat has a large venous system connected in front with the subcutaneous abdominal, laterally with the external pudic, and posteriorly with the perineal vein.

There are numerous lymphatic vessels that are connected with a large ganglion situate on the posterior quarter of the gland.

[1] J. Barrier Dictionn de Bouley et Reynal art. Mamelles, page 368.

MAMMÆ OF THE EWE.

There are two glands in the ewe, with two long cone-shaped teats, each with a single orifice.

Over the sides the skin forms a pocket abundantly furnished with both sebaceous and sudoriparous glands. The teats have fine wool on them.

At the free end of the teat are a number of large sebaceous glands arranged round the opening of the canal.

MAMMÆ OF THE GOAT.

The goat has two well developed mammæ, with two large and long teats that are inclined forwards. The mammæ are devoid of hair, and the layer of aponeurosis is wanting.

MAMMÆ OF THE SOW.

In the sow the mammæ extend along each side from the inguinal region to the chest—five or six on either side, and each with a short broad teat. The gland is devoid of hair; there are two, sometimes three, orifices, and numerous small galactopherous sinuses. There is a sphincter muscle round each lactiferous canal, which divides them from each other.

MAMMÆ OF THE CARNIVORA.

They much resemble those of the sow. The bitch has five on each side, with short truncated teats, with usually six orifices. There is no galactopherous sinus, the lactiferous canals running direct into each other. The excretory duct is surrounded with bands of muscular fibres.

The cat has four mammæ on each side, two pectoral and two ventral. Each teat has two openings, and, as in the mare, large sebaceous glands on each side.

The pectoral glands of the carnivora are supplied with blood by the external and internal thoracic arteries.

HISTOLOGY.

As before mentioned, the mammæ are made up of a number of small lobules resembling bunches of grapes, united together with a fibrous stroma.

Each gland studied separately comprises excretory canals and secretory cul de sacs.

Secretory Cul de Sac.—The acini are round or pyriform, and measure from one-tenth to one-twentieth of a millimetre. They consist of a basement membrane, cells of Ball, and glandular cells. The basement membrane is very thin and of a hyaline structure. The cells of Ball cover this membrane. They are contracted, and discharge the milk after secretion.

The glandular cells are arranged in a single layer on the internal face of this membrane, and define a central cavity in which the secretion accumulates. In a section of a lobule it is easy to demonstrate acini in full activity, the cells being swollen and rounded, and besides their action in a state of comparative repose, the cells being prismatic and depressed, with the nuclei ovoid and flat.

The mammary epithelium in action much resemble that of the sudori-

parous glands, as both secrete a serous fluid and fatty granules at the same time.

The Secretory Canals.—The milk secreted in the acini is collected by the intralobular canals, which unite to form the interlobular canals. These in their turn form the galactopherous canal.

1. *The Intralobular Canals.*—These are formed of basement membrane thicker than that of the acini, cells of Ball and an epithelial lining forming a single layer. The epithelium is cylindrical. That contains no fatty granules, but a large nucleus that fills up most of the cell.
2. *The Interlobular Canals*, on section, have not a regular cylindrical lumen, like the intralobular, the lining membrane being arranged in folds. They are formed of the same elementary tissues as the former.
3. *The Galactopherous Canals* pass to the sinus. They are formed of a fibrous sheath, a basement membrane, cells of Ball, and an epithelial lining.

Connective Stroma.—The stroma are formed of connective tissue containing but few cells. In the lobule it is exceedingly fine, the *culs de sac* being only separated by the blood-vessels.

The artery supplying the lobule runs along the interlobular canal, also the veins, but in the reverse direction. The capillaries form a rich plexus round the acini.

The *Lymphatics* are divided into two groups—those belonging to the galactopherous canals and those to the gland.

A. The lymphatics of the galactopherous canals are large, and seated in the fibrous layer that surrounds them. They anastomose with each other, and with those of the teat and gland. This fact explains the frequency of granular complications after injuries to the teat.

B. The granular lymphatics are all perilobular. They are composed of lymph and lymphatic capillaries communicating with each other.

The mammary nerves

DEVELOPMENT OF THE MAMMÆ.

The mammæ are formed from the two types of cutaneous gland—viz., tubular and racemose. The first stage of development consists of local hypertrophy of the mucous layer of the epidermis, which is depressed into the subjacent dermis, forming a depression known as the *glandular area.* The primary cellular mass gives out prolongations which divides it and forms it into the mammæ. The *teat* is formed from the glandular area, and may be done in two ways—*first*, by the edges of the grandular area being elevated and forming the teat ; *secondly*, the depression of the grandular area, instead of becoming more marked by the elevation of the edges, disappears, and in this way the glandular area rises up to form an angle, which eventually becomes the teat.—(*Roule.*)

(*To be continued.*)

TROPICAL ULCERS OF THE HORSE.

BY OLOF SCHWARZKOPF, VETERINARIAN (1ST CLASS) 3RD CAVALRY, VIGAN, P.I.

ONE of the tropical diseases with which our American horses are afflicted in the Phillipine Islands is an ulcerative skin disease to which the name of "tropical ulcers" has been applied at present. It is most probable that this skin disease has been known to army veterinarians who have been serving in tropical climates before us; at least I remember the description of a disease called "African farcy" in an English veterinary journal, which seems similar to, or may be identical with, our tropical ulcers in the Philippines. However, being without any veterinary literature whatever, I am unable to verify this statement at the present time, but abstain from giving a technical term to a disease which in all probability has been named before.

Symptoms.—"Tropical ulcers" appear soon after the rainy season has set in, and gradually disappear after its closure. The favoured seat of the ulcers is the inner surface of the lower region of the hind legs, but occasionally they appear as high up as the inner surface of the hock or thigh. They are seldom noticed until well formed, but if a horse already affected is watched, the development of new ulcers can be readily observed.

The primary lesion consists of the formation of a papule of about the size of a ten-cent piece, which is superficial, involving merely the epidermis, and bursts within a day or two, discharging a serous fluid. If the papule is opened and the contents collected in a glass tube, they appear as a clear, amber-coloured fluid. After bursting the epidermis collapses, becomes necrotic and sloughs, exposing a round-shaped, suppurating ulcer of the size of a ten-cent. piece, the edges of which are markedly well defined. In ordinary cases the number of ulcers does not exceed from two to six, and they remain confined to the region of the fetlock.

Aggravated cases of "tropical ulcers" are exceptional. If seen in full development they present a clinical picture which is quite dissimilar to the ordinary cases. The number of ulcers is greatly in excess of the average, representing fifty, sixty, or more, covering both the inner and outer surface of the hind leg clear up to the stifle. Isolated ulcers may appear on the abdomen, some on the breast, and in one case they were observed on the nose of a horse. In these cases many ulcers become confluent, forming irregular-shaped ulcerations of the size of a dollar or larger. Yet, even in severe cases, the ulcers remain principally confined to one hind leg, which becomes gradually enlarged by an even, doughy swelling, which is painful to touch. If such cases finally heal, the horse remains permanently disabled by an enlarged leg resembling elephantiasis.

The American horse is the animal which suffers most from tropical ulcers. American mules are rarely afflicted, and no severe case has been observed amongst them. The native pony, too, is seldom seen with tropical ulcers, and if so, does not seem to mind the sores. No ulcers have been observed on oxen and caraboas.

Differential Diagnosis.—The severe ulcers of tropical cases resemble farcy. A competent veterinarian can have no difficulty in making a correct diagnosis, because the ulcers are of even size, well opened and round, do not involve the derma, and do not follow the lymphatic vessels. The characteristic farcy buds are therefore absent. But the layman considers

it a case of farcy at sight, and officers in charge of horses have repeatedly reported so, asking for permission to destroy the animal.

Etiology.—It is obvious that there exists a relationship between the tropical ulcers and the rainy season, because no ulcers have been observed in the dry season, and as soon as this commences new cases cease to appear, and those under treatment heal rapidly. There is no doubt, also, that the specific cause of these tropical ulcers must be a germ, but it is not one easily to be determined. In the twenty microscopical examinations which I have made so far of the contents of papules from different horses, I have not succeeded in finding a specific germ, while the surface of the ulcer abounds in pus-cocci of different varieties. Although these few examinations have given negative results, it must be remembered that no facilities are provided the army veterinarian to do such work, while our army medical colleagues are heralding their secondary discoveries in veterinary medicine with fat headlines in Manilla papers and by circulars from Headquarters, with recommendations at once unnecessary and ludicrous, because utterly impracticable.

Therapy.—The treatment of the ordinary cases of tropical ulcers is simple aud effective. The daily cleaning with water and soap, the disinfection with some antiseptic lotion, and covering with absorbent cotton and bandages, brings about a ready cure. Of the antiseptics carbolic acid is the last to be chosen because irritating, while creolin (Pearson) has given the most gratifying results. This and absorbent cotton were liberally furnished during the campaign by the medical supply depôt, with which the veterinarian has no relation in time of peace. Next to creolin the white lotion is to be recommended, while ointments of any kind are absolutely to be discarded, as the process of suppuration seems to be rather helped along by their use in the tropics.

The treatment of aggravated cases presents a more serious problem. If the whole leg is attacked by tropical ulcers, it is always considerably swollen and painful, and, as can be imagined, it is next to impossible to keep it wrapped up in cotton and bandages from the restlessness of the horse. If this is not done the ulcers gradually get beyond control, and blood poison sets in with fatal result. In those cases which are finally cured, after months of treatment, the leg remains permanently enlarged, dotted with star-like scars, which become easily sore again, thereby preventing any use of the horse, so that he has to be condemned as unfit for service.

From the facts so gathered it has become evident to us that all depends upon an early and correct treatment of the tropical ulcers, to heal them, so to say, in their first stage of development. This is not always attainable in an army in the field, because the demand for horses is great, they are kept marching constantly, and the utter absence of proper veterinary equipments for actual warfare does the rest.

(From the *American Veterinary Review*, May 1902.)

CONCERNING THE ETIOLOGY OF PARALYSIS IN FOALS AND OF EPIZOOTIC ABORTION IN MARES.

In a recent work on this subject M. Sohnle came to the conclusion that there was a common etiology to the two diseases—that is, the same specific

germ. According to him paralysis in foals springs from infected mothers, which sometimes miscarried, sometimes were barren, and sometimes had foals infected with the disease. The contagion among mares was propagated by the stallions.

Professor Ostertag, of Berlin, arrives at different conclusions. Epizootic abortion in mares arises from quite another cause than that of pyæmia in foals. In the case of five paralysed foals of different origin, he had already found long pyogenic streptococci either in the blood when it consisted of the acute form of paralysis, or in the articulations when it consisted of a mild form of the disease, which is likewise the rule in cases of traumatic septicæmia in general. The inoculations of these streptococci reproduced septicæmia or pyæmic polyarthritis in horses, sheep, and goats. Sohnle, on his part, had diagnosed a pyogenic staphylococcus, so that the disease of the colts would be anything but specific; it would be a simple variety of ordinary septico-pyæmia.

As to the maternal origin of the disease, Ostertag does not admit this, the arguments advanced by Sohnle in support of this opinion not being valid. On the other hand, the long streptococci of paralysis in foals are different from the micrococci of mares which abort. The first-named kill mice, rabbits, and guinea-pigs. The only comparison to be made, according to the author, is that foals born of infected mothers are weakly, and more exposed to pyæmia.

Researches made on the subject of epizootic abortion have allowed of diagnosis in the fœtal envelopes, and in the bodies of mares which have miscarried, of micrococci capable of reproducing the disease in mares which have been inoculated. Attempts to transmit the disease from mares to pregnant cows have been without result. Injections of pure cultures of micrococci, as well as direct inoculations into the vagina, practised in cows with the fœtal envelopes or the liquor amnii of aborted mares, have always been negative. Ostertag concludes from this that there is no identity between the epizootic abortion of mares and that of bovine animals. But in the two diseases the mechanism is analogous; the specific germs arrive in the uterus by the vaginal or sanguineous passages; they provoke a uterine catarrh which leads to premature detachment of the fœtal membranes, with consequent abortion. The lochial flow then serves to disseminate the germs, and to transmit the malady to the other females.

The prophylactic measures recommended by the author scarcely differ from those generally used in cases of this kind. They are as follows:—(*a*) To bury at a depth of about a yard the fœtuses with their envelopes, first sprinkled with 1 per 1000 of corrosive sublimate; the dirty litter should be treated the same way: (*b*) Disinfection with the solution of corrosive sublimate of the place where the abortion has taken place; if this be a field it should be interdicted for three months to pregnant mares: (*c*) Persons who were present at the abortion or at the burying of the fœtus should carefully disinfect their hands and boots with soap, then with corrosive sublimate: (*d*) Abortive mares to get an injection of $\frac{1}{2}$ per cent. of lysol in warm water. These injections, begun immediately after abortion, are to be continued twice a week till the closing of the uterine neck and the cessation of all genital discharge. The vulva and the neighbouring parts to be equally washed with the same disinfectant: (*e*) While the injections are being given, the mares to be isolated and confided to a special attendant, kept at a distance from the other mares: (*f*) The harness and the stable utensils

to be disinfected with 5 per cent. lysol or else destroyed, as the case may be.

According to the numerous observations made in the best studs, abortive animals should not be put to the stallion till six weeks after the date of normal gestation.

Finally an important precaution, likewise insisted on by Sohnle, is to disinfect carefully with ½ per cent. of lysol the penis and the sheath of the stallion after covering a mare which has miscarried, in order to avoid giving contagion to any other mares served by the same stallion. In establishments where the disease is prevalent it is better to disinfect every stallion which has covered a mare, even though the latter has foaled normally. It sometimes happens that even infected mares foal quite regularly. Ostertag also recommends the application of this measure to stallions in non-infected studs, if they have covered a strange mare, in order to avoid the importation of the disease.

(*Monatsh. f. prakt. Thierheilkunde.*)

ON THE ETIOLOGY OF FOUNDERING.

Professor Aruch, while Director of the Roman Tramways Infirmary, constantly observed foundering in horses doing active work on hilly lines, in those that are well-fed and receiving strongly azotated food, in horses in the habit of resting for a few days and suddenly subjected to their usual work, and in young horses well-fed during training. He has, in addition, observed that the number of foundered horses was always in an inverse ratio to that of horses attacked by internal diseases, and that this number increased or diminished according to the good or bad state of the stud. Professor Aruch states, after studying the toxic power of the urine of a horse, that the latter, subjected to continually increasing work, became foundered. Forty-one experiments were made on rabbits to determine the toxic co-efficient of a horse's urine before, during, and after foundering.

Before foundering, the toxic co-efficient of a horse's urine, working three hours a day, is normal. But this co-efficient goes on increasing in proportion as the work of the animal increases. It is in fact equal to 1514, 1897, and 2420 as the animal works respectively six hours a day, eight hours with intervals of rest, and eight hours continuous work for three days on end. On the other hand, when the animal is allowed to rest the toxic co-efficient again becomes normal. We may remark that during these observations the animal received a ration of 11 lbs. of hay, 18 lbs. of oats, 400 grammes of flour, and 26 quarts of water. After severe work the horse, being very tired, is given a rest of two days. As the urine obtained during these two days shows a somewhat high toxic power, Professor Aruch concludes that the animal is ill. He is correct; the next day the animal becomes foundered.

During foundering—the animal getting food as mentioned above—the uro-toxic co-efficient is at least 1862, and when the animal gets hay and grass, or grass only, the co-efficients are 1428 and 3272. But by giving insufficient food (such as hay or grass), and by administering also substances to disinfect the intestinal tube, an amelioration is noticed in the gait of the horse, the toxic power of the urine becoming lower at the same

time. Foundering being once cured, the toxic power of the urine again becomes normal.

The examination of these facts has led Professor Aruch to regard foundering as the result of self-poisoning. The latter may be due to the toxic products which are formed in the organism by the effect of overwork, or else it may be due to the products which are formed when, in consequence of over-nutrition, the double process of assimilation and non-assimilation is augmented. The mechanism by which this poisoning is developed is without doubt complex enough, but anyhow one cannot deny the incontestable connection existing between the increase of the toxic power of urine and the development of foundering in the horse observed by Professor Aruch.

From all this, the author thinks himself justified in drawing the following conclusions:—

1. Foundering must be considered as the result of special self-poisoning.
2. The increase of the toxic power of urine precedes locomotor trouble.
3. All means which excite the function of the protective organs of the system (particularly the liver), and of the toxine eliminating organs (skin, kidneys, &c.), likewise perhaps insufficiency of food, and intestinal disinfectants, are required to cure foundering.

(*Annales de Médecine Vétérinaire.*)

THE DETERMINATION OF SEX IN SHEEP.

WORKING on the hypothesis that sex is determined by the influence of the more vigorous parent, M. Dechambre gives the following observations. He deduced from the hypothesis that in a lambing season the influence of the male might be predominant at the beginning, and that of the female towards the end. M. Dechambre examined three flocks, and found that out of 1065 lambs 519 were male and 546 female. Dividing the season of copulation into two portions he found—

First	half, for every	100	males	96·6	females.
Second	„ „	100	„	117	„

Dividing the season into three portions he found—

First	third, for every	100	males	89·6	females.
Second	„ „	100	„	119	„
Third	„ „	100	„	125	„

Dividing the season into four portions he found—

First	quarter, for every	100	males	84·3	females.
Second	„ „	100	„	107·3	„
Third	„ „	100	„	109·3	„
Fourth	„ „	100	„	146·3	„

It will thus be seen that at the beginning of the copulative period male lambs were in the majority, but the females soon made up on them, and at the end formed a distinct majority. M. Dechambre does not lay too much stress on these results, and says that a great number of observations are necessary before any reliable data can be found. He states, for instance,

to be disinfected with 5 per cent. lysol or else destroyed, as the case may be.

According to the numerous observations made in the best studs, abortive animals should not be put to the stallion till six weeks after the date of normal gestation.

Finally an important precaution, likewise insisted on by Sohnle, is to disinfect carefully with ½ per cent. of lysol the penis and the sheath of the stallion after covering a mare which has miscarried, in order to avoid giving contagion to any other mares served by the same stallion. In establishments where the disease is prevalent it is better to disinfect every stallion which has covered a mare, even though the latter has foaled normally. It sometimes happens that even infected mares foal quite regularly. Ostertag also recommends the application of this measure to stallions in non-infected studs, if they have covered a strange mare, in order to avoid the importation of the disease.

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(*Annales de Médecine Vétérinaire.*)

THE DETERMINATION OF SEX IN SHEEP.

WORKING on the hypothesis that sex is determined by the influence of the more vigorous parent, M. Dechambre gives the following observations. He deduced from the hypothesis that in a lambing season the influence of the male might be predominant at the beginning, and that of the female towards the end. M. Dechambre examined three flocks, and found that out of 1065 lambs 519 were male and 546 female. Dividing the season of copulation into two portions he found—

First	half, for every	100	males	96·6	females.
Second	„ „	100	„	117	„

Dividing the season into three portions he found—

First	third, for every	100	males	89·6	females.
Second	„ „	100	„	119	„
Third	„ „	100	„	125	„

Dividing the season into four portions he found—

First	quarter, for every	100	males	84·3	females.
Second	„ „	100	„	107·3	„
Third	„ „	100	„	109·3	„
Fourth	„ „	100	„	146·3	„

It will thus be seen that at the beginning of the copulative period male lambs were in the majority, but the females soon made up on them, and at the end formed a distinct majority. M. Dechambre does not lay too much stress on these results, and says that a great number of observations are necessary before any reliable data can be found. He states, for instance,

that whilst in one flock the proportions were 100·6 males and 107·3 females, in the second the proportions were equal, and in the third they were for 100 males only 98·9 females.

(*Bulletin de la Société Centrale.*)

ACTINOMYCES IN THE HAIR AND SKIN OF A COW SUFFERING FROM *HERPES TONSURANS.*

On examining microscopically the hair and skin scales of a cow which was suffering from *Herpes tonsurans*, Vet.-Surgeon Bonvicini found at the roots of the hair small pear or club-shaped bodies, which at their thin ends ran out into a fine fibrous web which surrounded the hair and partly penetrated into the cuticle. Similar bodies were found in the cuticular scales, and these were often arranged in rosettes. The centre of the rosettes was formed of fibrous web. Even with these data M. Bonvicini thought he had to deal with actinomyces, but he determined to cultivate the micro-organism in order to settle their cultural, biological, and pathogenic qualities. Along with this fungus there were found on the hair the typical trichophyton forms. The examination of the cow itself showed that traces of the bald fibre patches were still to be found, but these themselves were healed up. In addition, the cow showed a lung affection with the following symptoms,—twelve to fourteen respirations per minute, rattlings on both sides (on auscultation), also a whistling sound, and vesicular sounds increased; on the left side, far down and in front of the seventh rib, vesicular breathing was indistinct, and obscured by the rattling sound, and partly replaced by bronchial breathing. Percussion showed a little dullness on both sides with a tympanitic resonance. On the left side these symptoms were more distinct; in the centre of this side there was total dullness over a considerable extent. Percussion of the left pectoral wall seemed somewhat painful, and set up coughing. In the heart no abnormality was observable. For the rest, the cow was without fever, had a good appetite, and had, according to the owner's report, gained in condition since the time of her purchase. On the basis of this clinical observation it was impossible for M. Bonvicini to come to any clear opinion as to the nature of the lung trouble; unfortunately he had not an opportunity of performing a post-mortem. After investigation he found that the fungi on the hair of the cow justified his opinion of actinomyces with *Herpes tonsurans.* Attempts at inoculation led to negative results, as is so often the case with actinomyces.

(*Il nuovo Ercolani.*)

CIRRHOSIS OF LIVER.

(From Report for the years 1900-1901 of the Division of Veterinary Science of the New Zealand Department of Agriculture, prepared and edited by Mr. J. A. Gilruth, Chief Veterinary Adviser to the Government.)

"*Winton Disease*" *in Horses.*

During the past year or two several of these cases have come under our notice, two or three having been forwarded to the laboratory for more

careful examination, while a number of others have been treated, very often successfully, in the field. So far our observations have not led us to any very definite conclusions regarding the primary cause of this perplexing disease, which still appears to be confined to the District of Southland, chiefly from the Winton district of the Oreti Valley downwards to Invercargill, and westwards towards the Mataura Valley. Our studies, however, have proved the value of the strychnine method of treatment, which, when used intelligently and with due regard to nursing, especial care being taken to prevent overloading of the stomach, has generally proved successful if adopted in time.

In the annual report for 1897 considerable space was devoted to a description of five cases and their resultant recovery, belonging to Mr. William Keith, of Winton, on which the strychnine treatment was first tried. Curiously enough, although for many years previously Mr. Keith had annually lost one or more horses from this disease, after the recovery of these animals until October of last year (nearly four years) there had been no further cases, and the horses were to all appearances completely cured. However, about the end of September, the horse "Dan" again showed symptoms of the disease, and these rapidly assumed an aggravated form. The animal was treated on the farm for some time, but gradually became emaciated, while the symptoms showed little or no amelioration. By request the animal was ultimately forwarded to Wellington for personal observation, although he was not expected to last through the long journey of two days on board train and one day on steamer. Care was taken to have him attended *en route*, and in spite of the travelling, which really occupied four days, regular doses of strychnine were administered hypodermically. On being landed from the boat here the animal could barely stand, so weak and emaciated was he. The typical symptoms of the disease were present,—*i.e.*, staggering, drunken gait, amaurotic condition of eye, clammy mucous membrane of the mouth, weak irregular pulse, sluggishness of the bowels, and visible mucous membranes slightly tinged with yellow. An additional characteristic symptom was the abnormally depraved appetite, while the urine was dark in colour and very offensive in smell.

After arrival the animal was comfortably housed and careful attention was paid to his food, while powders containing sodii sulph. and strychnine were administered twice daily. For the first two days no improvement was noticeable, in fact the symptoms increased slightly in severity. The horse would not lie down, but walked about the box in an aimless, drunken manner, bumping against the wall, or stood with his head pressed against the wall and swaying from side to side. His attitude and expression seemed to intimate that he was continually about to fall, and was making constant efforts to prevent himself from doing so. But by the end of the first week a great improvement had taken place, so much so that he was very much brighter, and could walk about practically without the slightest stagger or sway. For some days further the improvement continued to be satisfactory; but one morning, while in the yard unattended, he got access to a box containing some bran, and secured an over-supply of food. As a result of this overloading of the stomach, the next day showed a return of the characteristic symptoms as above described. However, this attack was of short duration, and again the animal's condition became almost normal. Unfortunately, a week later, during the night he burst the door of his box off its strong hinges, and finding a heap of half-made hay, straw, and other

rubbish lying near the destructor, he gorged himself to repletion. As a result he exhibited all the symptoms of the disease in so aggravated a form as to present the ludicrous appearance of a drunken horse. In staggering about he had fallen and cut himself over the eye; the ground being wet he was covered with mud on one side, and this, with the expression of the face, the heavy eyelids, and the staggering swaying gait, forcibly brought to mind a drunken man. With difficulty he was got into the box, but when there he would not rest. Next morning he was found lying semi-comatose, he having evidently fallen during the night, and, as hopes for his recovery were then quite out of the question, he was destroyed. No doubt, had it not been for his breaking out of his box, and the gorging of the stomach with indigestible food, he would have ultimately recovered as he had done before.

The post-mortem examination showed that the pathological changes were, as usual, almost entirely confined to the liver. This organ was externally of a mottled slate-colour, hard and dense in consistency. The maximum measurements were 25 inches by 16 inches, the weight being 17 lb. The capsule was thickened and adherent to the liver substance. On section the organ was tough and leathery, being evidently very fibrous. The veins throughout were very much distended, while the arteries were apparently normal. The fibrous growth seemed to be more dense in the centre of the organ than at the periphery. The heart was practically normal. The stomach was very full of ingesta, containing about 2 gallons, and was distended by gas. The mucous membrane was thickened here and there in irregular patches sharply defined, reddish in the centre and grey at the borders, varying from $\frac{1}{4}$ inch to 1 inch in diameter. At the pyloric end, and for the first 6 inches of the duodenum, there were a large number of the larvæ of the *Œstrus hæmorrhoidalis*, the mucous membrane being nodular but not inflamed. Microscopical examination of the liver showed that condition of interstitial cirrhosis which has been previously described, combined with atrophy of the portal lobules, and dilatation of the intralobular veins. Smears showed the presence of small cocci and diplococci, many irregular in contour, situated in and around the liver cells. Such bodies are always present in these cases, but I have not been able to demonstrate that they have any pathological connection.

The blood was frequently examined during the time the animal was in Wellington, but beyond the presence of an abnormal number of leucocytes, with large irregular nuclei, no pathological change could be demonstrated.

The above case is interesting as proving how long an animal can remain to all appearance healthy and in full work while suffering from an intense cirrhosis of the whole liver. It may be observed here that the other four horses of Mr. Keith are still in apparent health, although it is four years and a half since they were under treatment for the same disease.

This case also shows the benefit to be derived from the strychnine treatment, and, above all, the intimate connection there is between the stomach and the disease, or at least the symptoms exhibited.

Cases among Cattle.

Several cases of hepatic cirrhosis among cattle were found in Southland and one near Stirling, all occurring about the same period. The first was located near Wyndham, the subject being a nine-year-old cow (owner, Mrs. Sutherland), which presented all the usual symptoms of this disease as ex-

hibited by bovines: general emaciation and debility, jaundice more or less pronounced, ascites, chronic diarrhœa, &c. A post-mortem examination revealed characteristic appearances: liver shrunken and exceptionally firm to the touch, its capsule adherent, slaty-blue in colour and glistening in appearance, some five or six gallons of ascitic fluid in the peritoneal cavity, with much fibrinous deposit and a general dropsical appearance of the lymphatic glands, &c. Portions of the liver were sent to Wellington, which on section revealed a condition of advanced cirrhosis. A small portion of the fresh liver tissue was pulped, diluted with distilled water, and subcutaneously inoculated on the spot into a six-months'-old calf. This animal was kept under observation for several months, but continued in perfect health. No inflammatory swelling appeared at the point of inoculation, and when slaughtered, some nine months later, the liver was found absolutely healthy. Inquiry elicited the fact that this cow had been in the owner's possession for eight years past. During the previous twelve months seven other cows had died on the same place, all said by the owner to have exhibited exactly similar symptoms. The farm was a small one, only 38 acres in extent, and situated on the bank of the Mataura River, from which the cattle derived their main water supply. About 3 acres of undrained swamp, to which the cows had free access, were included in the property.

About the same period a number of deaths, apparently from the same cause, occurred on a farm near Invercargill, occupied by Mr. G. M'Lean. At the time of the first visit it was ascertained that within the preceding two months eight cows had died, or had been slaughtered when their condition became hopeless, all exhibiting symptoms as described above, while three of those remaining were obviously similarly affected. One was at once destroyed and an examination made, with the result that the characteristic post-mortem appearances were found. The other two were put under treatment, with the result that one improved considerably, and later appeared to have recovered; but the other, which was at the beginning obviously in a much worse condition, became progressively weaker, and was ultimately destroyed. On post-mortem all the characteristic lesions were disclosed. The owner stated that the whole of the animals affected had been bred on the place, and had never been off it except to graze on an adjacent road-line. The land was low lying and wet, and the cattle derived most of their water supply from surface water.

Closely following on these cases, two other cows were found similarly affected on a farm about two miles distant from M'Lean's. In one the symptoms, though unmistakeable, were not very acute, while the other was obviously in a serious condition. The conditions under which these animals were living were practically similar to those prevailing at M'Lean's. Three other cows, said by the owner to have exhibited similar symptoms, had died during the previous two months. The whole five had been bred on the place, and no fresh stock had been introduced for some four years past save one young bull, bought about eighteen months previously. This animal, three months after his introduction, sickened and died, the owner stating that he had shown all the typical symptoms of Winton disease. As one of the two cows appeared likely to stand a journey, she was despatched to Wellington, arriving alive but in a very weakened condition, falling three times during the trip from the wharf to the laboratory. She was much emaciated, walked with an uncertain, staggering gait, and had the general appearance of drunkenness characteristic of the disease. Diarrhœa was

present, the fæces having almost a bloody tint, while the appetite was poor and capricious. She was put under treatment, and for some days showed marked improvement, but the diarrhœa persisted, and eight days after arrival she suffered a serious relapse, being found in the morning semi-comatose, and in a state of general collapse. A post-mortem examination revealed the usual condition of advanced cirrhosis of the liver, together with ascites, about a gallon of serous fluid being present in the abdominal cavity. The lungs showed areas of collapse, also dilatations of the lymph channels. The heart was flabby, with sub-endocardial hæmorrhages in the left ventricle. The spleen was dark in colour and congested, and the whole of the abdominal tissues, including the intestinal walls, were very friable and dropsical in appearance. Tubes of nutrient media were inoculated from the liver and spleen, and in those from the liver pure cultures of a diplo-cocco-bacillus were obtained. Inoculation experiments made with these cultures proved quite abortive. In addition to this about 1 lb. of liver substance was mashed up, diluted with water and pollard, and administered per orem to an aged cow in good health. Some nine months later this cow was slaughtered, and a careful post-mortem examination made, which failed to disclose any lesions whatever either in the liver or elsewhere.

Some two months later a closely similar case was discovered on Inch-Clutha. The subject was an aged cow which had for several weeks previously exhibited marked symptoms of ill-health, chronic diarrhœa with progressive emaciation being marked features. She was destroyed, and, on post-mortem examination, revealed the characteristic appearances of the disease, with ascites. The liver was in an advanced stage of cirrhosis, but on section differed from previous cases, in that it exhibited marked blood extravasation throughout its tissues — a condition probably due to the obstruction of the circulation within the organ, resulting from the occlusion of many of the smaller channels of the portal system, consequent upon the pressure exerted by the thick bands of fibrous tissue which were present throughout the organ. This was demonstrated later by microscopical examination of sections in the laboratory at Wellington. This case is of particular interest, seeing that it is the first of its kind that has been noted outside the limited area in Southland wherein all previous cases have been found. Careful inquiry elicited the facts that this cow had been bred and had lived the whole of her life in the immediate neighbourhood. It may be noted, however, that the district presents the same physical characteristics as the other, it being low-lying and wet.

Etiology.

In the report of 1897 attention was drawn to the theory of Gioffredi, that many cases of cirrhosis of the liver in the human being were due to an auto-intoxication, and not to alcoholic poisoning. At that time, and in nearly every case since, we have observed that the symptoms became ameliorated to a very marked extent when the greatest care was taken to limit the diet, and that very grave symptoms always followed undue repletion of the stomach. In fact, for the successful treatment of any case it is an absolute essential that the patient be housed and sparingly dieted. The above case bears out the theory of auto-intoxication. There is no doubt that the symptoms described were not due simply to the overloading of the stomach, but to some toxic agent produced by fermentation or other abnormal process of digestion. That this agent is akin in its physiological

effects to alcohol the symptoms are ample evidence. Assuming then that such a process of fermentation, or abnormal digestion, were to a small extent going on continuously, although not sufficient to cause general want of muscular co-ordination, would not one expect to find similar results to those produced by continuous doses of alcohol? Of course, the nature of the toxin remains to be demonstrated, and even the initial cause of that poison, which is, in all probability, some micro-organic body belonging to the vegetable kingdom. Unfortunately, researches in this direction were interrupted by Mr. Gilruth's visit to Europe. The departmental chemist (Mr. Aston), however, carefully analysed the contents of the stomach and the urine, but found none of the known body of alcohols present.

So far as the liver is concerned, we are satisfied the primary cause is not to be found there. Repeatedly cultures have been attempted not only from that organ, but from others, and beyond what were evidently ordinary organisms in a few tubes the great majority have always remained sterile. Various media have been used, even special media made with liver pulp, but without success. Even those micro-organisms which have been found have been experimented with by feeding, by subcutaneous and intravenous injection, with no result. Besides this, portions even to 2lb. weight of liver have been minced up and administered per orem, and portions of liver have been bruised up with bouillon, filtered, and the residue injected. But all these methods have failed to reproduce the disease. It now remains to be seen what results will follow experiments conducted from the standpoint that the digestive tract is the primary seat of the disease.

EPITHELIOMATA.

Epitheliomata affecting the External Epithelial Membranes.

These have been mentioned in previous years as occurring fairly frequently, and in the last annual report details were given of a considerable number affecting both cattle and horses, the nature of the tumours being proved by microscopical examination. During the past year again a number have come under the notice of the veterinary officers and of the inspectors of stock, the particulars being similar in every way to those recorded last year. No doubt the reason these tumours are apparently more numerous here than in many parts of the world is that they are neglected in the early stages, and are generally only brought under the notice of the Department when so far advanced as to be unsightly. The data of the last report showed how little tendency these neoplasms have to be malignant even in the comparatively advanced stage, and the indications were that they could be readily amenable to surgical treatment if applied sufficiently early. During the past year Mr. Wilkie has removed several from the membrana nictitans, and none, he reports, so far show any indication of recurrence.

(A drawing by Mr. Wilkie of one of his cases is shown in the Report.) He reported that "the neoplasm involved the whole of the eyeball, and the submaxillary glands were evidently secondarily affected. The sufferer was a useful draught mare fourteen years of age, which had had several foals, and was known to have been affected for the past ten years." She was slaughtered, and microscopical examination showed the correctness of Mr. Wilkie's diagnosis as to the nature of the growth and the secondary infection. The length of time the animal was affected is remarkable, and

shows the comparatively feeble malignancy of these tumours, as well as the neglect of ordinary remedial measures.

Another case reported by Mr. Wilkie was a mare which had had several foals, and was about twelve years old. In this case the tumour was very large, and in the usual situation. It had for its origin the corner of the mouth, and extended along the upper lip and downward to the submaxillary space, the glands of that region being affected. The growth had been noticed for over a year.

The following account by Dr. M. Campbell, of Palmerston North, of a case in a horse which came under his observation, and specimens of which he kindly forwarded here, is interesting:—"The eye was knocked out by the point of the hames about eighteen months ago. The horse was working for a year. He was then turned out for some months, after which a growth was observed which the owner attributed to the animal having rubbed the blind eye on a stump. He kept the growth down for a time by applications of copper sulphate, but it gradually grew larger, and when I made the examination it measured 15 inches by 11 inches by 5 inches. The owner says pieces the size of his fist dropped off sometimes."

The most frequent seats of these tumours in both cattle and horses are the junction of the skin and mucous membrane at the edge of the vulva (especially in the cow), and the membrana nictitans (the third eyelid). The former situation is more difficult to deal with on account of the impossibility of preserving the wound aseptic. The latter, in the earlier stages of the growth, presents a comparatively easy field of operation to the surgeon, and, as has been shown, the result of an early operation is usually satisfactory. Another seat of these tumours is the brand mark, especially on cattle, and this in some districts is the most frequent of all. In some instances operative treatment was attended with successful results, although the growth was in an advanced stage, but the animal is rarely worth the subsequent trouble of daily dressing the wound. Practically the only effort ever made by the owner is to apply strong caustic, such as copper sulphate (bluestone), but, so far as I am aware, in no case has this treatment proved to have any beneficial result, while the contrary is usually the case, the tumour growing more rapidly than before. Such treatment is barbaric and perfectly useless.

Epithelioma affecting the Œsophagus of a Cow.

This case was reported by Inspector Deem, who forwarded specimens for examination. The owner had been in possession of the animal for only a few months when symptoms of some internal malady were exhibited. Mr. Deem was asked to look at the cow, but at that time she showed no definite symptoms of any disease, and was apparently in good health. A month later he again examined her, and found she had become poor in condition. Meanwhile, she groaned when moved, and seemed to have great difficulty in swallowing food. At intervals a rattling noise was emitted from her throat. She was slaughtered by order of the inspector, who made a careful post-mortem examination, the results of which are as follows:—At the junction of the œsophagus and rumen there was an ulcerating growth 10 inches long, while the walls of the œsophagus and rumen were thickened by about ½ inch by the extension of the growth for about 8 inches or 10 inches further in each direction. The ulcerated mucous surface was roughened and of a papillomatous appearance, greyish-

white in colour, and covered with a slimy purulent exudate. The hepatic, mediastinal, and bronchial glands were very much enlarged, some having attained the size of a small hen's egg. On section they showed greyish slaty-white streaks of a spongy material throughout the cut surface. The remaining organs were healthy, although the body at the time of slaughter was considerably emaciated. Specimens forwarded were portions of the thickened rumen and lymphatic glands. The portion of the rumen was about 1 inch in thickness, hard and fibrous, with an nodular ulcerating appearance of the mucous surface. Here and there throughout the tissues large degenerated caseous areas were present. The lymphatic glands were as described above, although one was completely caseated in the centre. Sections under the microscope showed the growth to be that of an ordinary epithelioma, with secondary infection of the neighbouring glands.

Epithelioma affecting Scrotum of Bull.

This was in a shorthorn bull, reported by Inspector Blundell. About six months before slaughter the owner noticed the scrotum looking swollen and inflamed. Soon afterwards the skin cracked and assumed the appearance of a raw ulcerating wound. Gradually the growth increased until seen by Mr. Blundell, who, suspecting the nature of the disease, ordered the slaughter of the animal. Specimens forwarded to the laboratory confirmed his suspicions. Unfortunately he did not observe the condition of the inguinal lymphatic glands.

Epithelial Tumour in the Liver of a Ewe.

This was observed by Mr. Crabb while inspecting meat at Ngahauranga works. The carcase of the animal was fat, and all organs, with the exception of the liver, were healthy. In the central lobe of the liver, under the capsule and about the middle of the lobe, was a large circumscribed tumour measuring about 6 inches by 4 inches, and apparently encapsulated. Section showed the growth to be of very soft reddish-grey material lobulated on surface, and fairly easily enucleated. On microscopical examination the growth was found to consist of large cubical epithelial cells, arranged in the form of small ducts. These new cells were very vacuolated, and had no appearance of normal liver cells, but rather resembled those of secondary carcinoma of the kidney. The apparent capsule of the tumour was simply the liver-substance proper, the lobules of which were atrophied, evidently by pressure of the new growth, which was fairly distinct, and did not pass between the lobules.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

An ordinary general meeting was held at 10 Red Lion Square on Thursday, May 1st, 1902, Mr. A. Rogerson, President, in the chair.

Discussion on Mr. W. Roger Clarke's paper on "The Internal Discipline of the Veterinary Profession as provided for by Act of Parliament and Royal Charter, and as administered by the Council and Registration Committee of the Royal College of Veterinary Surgeons."

Mr. Hurndall asked whether it was wise that Mr. Thatcher should be

present, bearing in mind the subject under discussion, and whether there was any special reason for Mr. Thatcher having been invited to attend.

The PRESIDENT pointed out that Mr. Thatcher had been present when Professor Macqueen read his paper on Advertising, and Mr. Thatcher, knowing that Mr. Clarke was to follow with the present paper, deferred his reply until he heard what Mr. Clarke had to say about it. He (the President) had invited Mr. Thatcher to be present and speak that evening, as Mr. Thatcher had said nothing on the previous occasion.

Mr. HURNDALL thanked the President for the explanation, but still considered that it was injudicious.

Mr. HENRY GRAY: Mr. President and Gentlemen,—My first words in opening the discussion of this important paper must be of sincere congratulations to the essayist, not only for his courage in the choice of his subject, but for the vigour and lucidity with which he has handled it.

I have heard it said since this paper was read that it ought not to have been read, and ought not to be discussed; that Mr. Clarke did wrong in bringing such a subject before us. I believe two or three members expressed that opinion. I expected to hear it again to-night, and have already heard it before the discussion began. But it seems to me a very short-sighted one to say the least.

In his inaugural address on July 23rd, 1872, Mr. J. Blakeway, Stourbridge, the then President of the Midland Counties Veterinary Medical Association, said: "It is a fallacy to think that these meetings are only for the discussion of scientific subjects, and blind indeed must that man be who holds we have no right here to advocate reforms or call in question the acts and doings of those who represent us. Just as absurd would it be to expect that the constituents of a county or town should never question the doings of their members in Parliament, or endeavour in any way to influence their actions." He further on said: "Let him also, who is able to attend the annual meetings of our College, support only those who have the interest of the profession at heart and will also regularly discharge duties that devolve upon them. By these means we shall show to the professional world that we are earnest and sincere in our desire for progress, and that whatever subject comes before us, that by calmly, fairly, yet freely and fearlessly discussing it we shall establish such a fellowship among our body as shall make the motto of our College not a dead letter, but a reality." You will find this on referring to page 770 of *The Veterinarian* for 1872, vol. 45.

The real question is, How far the essayist is right in his conclusions? We must remember one of the avowed objects of this Society is the "advancement of the interests of the profession," and if Mr. Clarke's view of the manner in which our internal discipline is conducted is correct, or anything like correct, then certainly he will have advanced the interests of the profession not a little by thus publicly bringing this matter to our notice. He has used some pretty strong language, but unless the facts he has stated can be disproved, he was justified in doing so. If, as he says, the Council and Registration Committee have repeatedly transgressed our Act of Parliament and neglected the most elementary points of English law, then it is the duty of every one of us to do what he can to bring about a better state of affairs.

In a word, Mr. Clarke has stated that our internal discipline is improperly conducted by unfit hands, and no better way of seeing matters put to

rights could be thought of than by bringing it before the notice of the most powerful and influential Veterinary Society in Great Britain.

Now to come to the paper itself. The only comments I make on the essayist's *résumé* of the Acts and Charters is, that I agree with his views as to the meaning of both.

Now, he invited opinions on the bye-laws, and I desire to mention one of the few useful bye-laws that the Council has passed on this subject, though it seems only to have been passed to be disobeyed. *Bye-law* 115 provides that if a man who has entered a defence be struck off the Register, a full report of both charge and defence shall be published in the professional journals.

That bye-law has been on the Register for some years now, though not many months ago I heard one of the sapient legislators profess to be unaware of its existence. Men have been struck off—two were removed in the year 1900-1901—and we may take it that some at least defended themselves, but I have never seen any account published of either charge or defence. That bye-law appears to have been disobeyed.

Passing on to the essayist's allusions to the Pinkett case and the Cambridge case, all I can do is to agree with every word he uttered, and to wonder how many of the Councilmen are really fit for their position.

Now I come to the third section of the paper, in which the essayist chooses the Banham case as an example of the incompetence—to call it by no worse a word—of the Registration Committee. I witnessed the Banham trial, as did Mr. Clarke, and strongly as he has spoken about it, I agree with every word he said.

He invited comment on Mr. Simpson's action in receiving and passing an anonymous information, and finally, having done so, sitting as judge. I condemn Mr. Simpson's action, and I dwell on it because of what has passed since Mr. Clarke read his paper. At the last Council meeting Mr. Dollar made similar statements to those of the essayist, and Mr. Simpson denied them. Now Mr. Dollar made the same statements six months ago in *The Veterinarian*, and Messrs. Banham and Clarke have repeated them since. So that three men have stated what Mr. Simpson now denies, and I make a fourth. In last week's *Veterinary Record* Mr. Banham contradicted Mr. Simpson's denials and challenged the Council to let him publish the report of the so-called trial. I scarcely expect that our legislative assembly will dare to allow a case which exhibits their incompetence so glaringly to see the light. But until they do I hold by my recollections of the admissions made at the time. And I say that Mr. Simpson in receiving and conveying anonymous information, and in afterwards judging a case instigated in so questionable a manner, did less than justice to himself and the position he occupies.

Mr. Clarke did not mention one point in the Banham trial which illustrates the strange notions the Committee have of procedure. Wishing to deliberate in private on the case, the Committee desired Mr. Banham and two spectators, Mr. Clarke and myself, to withdraw.

Of course we did not object in the least. But a third spectator, Mr. Villar, and Mr. Thatcher, who was conducting the prosecution, remained in the room all the time we were kept out. Now I ask why was the defendant turned out of the room while the counsel for the prosecution was allowed to stay in it. I should like to hear the reason to-night for what seems to me an improper action.

I can only speak very briefly about other points in the Banham case. I perfectly agree with the essayist's views. Now I ask these three questions about that case:

1. Why was the man ever summoned before the Committee at all?

2. Why, when he had come, was he told that it was immaterial when the circulars were issued?

3. Why, when he had shown the Committee and solicitor that they had no case against him, did they adjourn the case and waste the College's money in the vain endeavour to rake up a case against their opponent?

Unless these three points can be placed in a very different light to that in which the essayist places them, I maintain that nearly all the Registration Committee—and that means most of the Council—are unfit for their work and position. The first step towards the amendment of our internal discipline is an all but complete change in the hands that administer it.

If Councilmen in the past have violated our Act and defied every principle of English law, it is our duty to prevent a repetition of such actions in the future. And it is for that reason, and to insure that defendants in the future shall be tried fairly and legally, that I welcome this paper and ask the meeting not only to consider it carefully, but to act on it afterwards.

Mr. THATCHER said that he was exceedingly obliged for being allowed to come there that night. His object in coming there was to discuss the Registration Committee, and not any personal question, although he was in the hands of the meeting, and if they desired to hear anything on the Banham case from him he should be pleased to comply. It would serve the avowed purposes of the paper if he were to consider for a little while the origin of the Registration Committee, the Council, and what were their respective powers. He thought Mr. Clarke might be fairly congratulated on the way in which he had put forward the constitution not only of the Council but of the Registration Committee. He would not go over the ground again in detail, but the first discipline the Council ever had over the Body Corporate was that given by the Charter of 1876, which gave a certain majority the right to remove a man's name from the Register. That was simply a personal matter, so far as he was concerned; it did not interfere with his earning his living in the least, but when they came to the Act of 1881 they found a very different state of things. They found that the effect of removing a man's name meant social ruin, therefore the legislature very properly said, before you can do this the man must either be convicted of crime, desire to voluntarily retire, or be guilty of conduct disgraceful in professional respects. For the purpose of ascertaining the facts of the case a Committee had been appointed whose duty, as Mr. Clarke had said, was to ascertain the fact and report to the Council, but it was a court of inquiry only, it had no plenary jurisdiction. Those facts were to be ascertained by an inquiry before the Committee. Mr. Clarke had raised a point that every case came first of all before the Council and then before the Committee. He would refer them to Bye-laws 22, 23, and 24.

Mr. CLARKE pointed out that if the bye-laws clashed with the Charter or Act they were illegal.

Mr. THATCHER agreed, but said the question was whether bye-law 23 did.

Mr. CLARKE pointed out that the question they had to determine was the meaning of the Act and Charter on that one point.

Mr. THATCHER concurred, but contended that the bye-law carried out the section of the Act. The procedure which was carried on by the Committee and the Council was that a complaint was made in the first instance. The Secretary then wrote to the person complained of, asking if he had anything to say; if so, the explanation was brought before the Committee at its next meeting. And that had one very useful purpose, that it cleared away a large number of cases, because they very often found that that explanation made an end of the case. If a case required more serious consideration, the person was asked to attend and give a personal explanation. He had a right to be represented by counsel, to call witnesses, and lay his case before the Committee, who then reported to the Council. A shorthand writer was employed at the meetings of the Committee, and his transcript, together with the finding of the Committee, was laid before the Council; and he did not know how any fuller representation of the facts could be laid before the Couucil. Complaint had been made that the Committee sometimes made recommendations; they did; but so did juries. Juries often found men guilty, but added that they had had great provocation, and recommended them to mercy. They had been told that the Committee was a dreadful body, yet the curious thing was that the complaints from outside were not that it had been too severe, but that it had been too lenient. That was so in the Commission Case and in the Cambridge Case.

The Council had been asked more than once to define a code of what was and what was not professional conduct. It would be almost impossible to do that, because if every gentleman there were to put down some separate acts of professional misconduct, they would find cases crop up within a few weeks outside of every one of them. They could lay down general principles, but every case must be decided on its merits. He should like anybody for instance to lay down where advertising began and where it left off. They might have a paid interview, but who could prove it was paid for? Or an inspired article, but who was to prove the inspiration? Circulars were advertisements which spoke for themselves, but there were some advertisements that they could hardly call advertising at all, although they might strictly come within the four corners of the bye-law: where, for instance, a young man starting practice in a new district, or a man moving to another town, put short notices in the papers. Strictly that would be advertising, but those things would not be noticed unless continued for an inordinate length of time. As a matter of fact not one member was off the Register at that moment for advertising, and only three men had gone so far as to cause a resolution to be passed against them on that ground, and in two cases a month's grace was given, firstly to enable them to discontinue if they chose; secondly, to enable them to appeal to the Privy Council, pending whose decision they would be free men. The third was a very bad case of advertising; the man had been warned again and again, and as he neither retracted nor appealed his name had been taken off. After two or three months he did appeal to the Privy Council, who demanded the views of the Council, and after getting those views they declined to interfere. That man's offence had been of a double-barrelled character; he not only advertised, but advertised that he was a member of College.

With regard to crime he did not think six names had been taken off the Register during the time he had had the honour of representing the College.

XIIM

As to unqualified persons, there was the veterinary forge case, which had settled once for all that unqualified persons were not entitled to use the word veterinary. Occasionally they came across men who called themselves veterinary surgeons who were not, and who were prosecuted, and a conviction and fine generally obtained.

He would have liked to make some explanation with regard to Mr. Banham, but he quite agreed that the less that was introduced of a personal character the better. All he could say was that through an unfortunate oversight of his own he had overlooked a point in Mr. Banham's letter which he ought not to have overlooked, and for which he was entirely responsible. A great deal of the unfortunate controversy had arisen in consequence of it, and he could only say to them, as he had said to the Registration Committee, that the fault was entirely at his door, and that it was a quite inexcusable oversight. He personally regretted that he should have occasioned any trouble or annoyance or anxiety to Mr. Banham, and he tendered him that apology in the presence of them all, as he had before tendered it to Mr. Banham at the meeting of the Registration Committee.

In conclusion, he would ask them what was their remedy if anything was unsatisfactory. Surely not vexatious opposition. They could always manage better by conciliatory measures than by threats. If the Committee were wrong, if the bye-laws were wrong, he would ask them not to pitch into himself and others and blow them up, but tell them where they were wrong, and he was sure that the Council would endeavour to put it right. If the bye-law against advertising was wrong, let them see where it was wrong and set it right, but do not let them, as an advancing profession, pose before the world as being rent with internal dissensions. What they had to do was to work together in harmony, and if things were wrong endeavour to put them right.

He felt with Mr. Hurndall that they could discuss the matter far better in his absence, and so he would withdraw. (Applause.)

Mr. J. A. W. DOLLAR said he had greatly appreciated the paper so ably put before them by Mr. Roger Clarke. He thought no one would deny a meed of congratulation to the Solicitor of the College for his extremely temperate although somewhat optimistic remarks, but he regretted Mr. Thatcher's short stay because he had to very strongly disagree with some of them.

With regard to advertising, before the passing of bye-law 113 the work of the Registration Committee was comparatively slight, and seldom brought the Committee into conflict with members of the profession. In those days the powers of the Committee were directed only against those persons who had come in conflict with the laws of the land, and rarely persons accused of purely professional offences. Advertising had been scheduled as an offence, because it depreciated the profession in the eyes of the world, but they must not lose sight of the fact that in the eyes of the world a very great difference must be drawn between the offence of professional advertising and the offences for which men were in former days removed from the rolls. The public thought little of the offence of advertising as compared with that of perjury or stealing, or receiving an illegal commission, but the Committee took a diametrically opposed view. He drew a great distinction between the two kinds of offences (a trumpery advertisement was only calculated to injure the person himself), and he regretted that there was only one law with which to punish very great offences. He

regretted that instead of bye-law 113 bringing peace it had brought a sword, and instead of promoting amity it had brought spite, hatred, and ill-will.

The real central point to which he wished to direct their attention was the fact that the Registration Committee was like no other body of a judicial character in existence, inasmuch as it comprised prosecutor and judge, that its proceedings were private, and that the name of the person complaining was not revealed to the defendant. In the event of a malicious prosecution a defendant had no chance of instituting proceedings against his accuser and obtaining redress.

For a long time the General Medical Council had been in the same position as the Registration Committee, that was to say, that it was both prosecutor and judge, but its members saw the danger ahead, and they abstained as far as possible from meddling in the social affairs of its members; in fact their position was very similar to that of the Registration Committee before the passing of bye-law 113. It was not until the Medical Defence Union came into existence that that state of affairs was remedied. That body was elected from the members of the medical profession, with a properly elected President and Council, who retained the services of a solicitor and counsel, and to which all complaints of professional misconduct were referred. It had to come before the General Medical Council in public, submit its evidence, and prove its case, just as any other prosecutor did before an ordinary court of law. The difference between that body and their own was that the court which struck a man from the rolls in the medical profession was a judicial body which heard prosecutor and defendant, and being independent of both, formed its decisions without fear or favour. If a mistake was made, or if a man was maliciously prosecuted, he had his remedy at common law. The Registration Committee was not public, and there was no ostensible prosecutor.

Professor PRITCHARD pointed out that the name of the accuser was divulged to the Committee, and if the accused were brought before the Committee he learnt the name.

Mr. DOLLAR replied that that was not so. He had frequently heard an accused person ask for the name of his accuser, and the Chairman had denied him, saying the name was not divulged.

Mr. BANHAM said that in his case neither the Chairman, the Committee, nor himself knew who the accuser was, nor did they to that day, except by guess-work.

Mr. DOLLAR, continuing, said, without reflection upon the Committee, neither that body nor any other in the kingdom was fit to be trusted with such absolute and uncontrolled powers.

Another weak point was the fact that the Committee were often called upon to adjudicate upon thirty or forty cases in the space of a few hours, and he maintained that proper attention could not be given to a case on which very often a man's social ruin rested in two or three minutes.

Another thing he objected to was the lack of judicial knowledge on the part of the members, and also the desire shown by them to extend their powers beyond any Charter or Act, and to advise men on subjects of good taste—to say this was good taste, and that was bad taste. He should strongly object to any one attempting to educate him on such a point.

Another grave dereliction of duty on the part of the Registration Committee was in failing to report to the Council, as in duty bound by Act of Parliament, the facts of the case where a person has been accused. The

Committee merely presented their opinion in state to the Council of what should be done, that was to say, they delivered their verdict, keeping the Council in absolute ignorance of the facts. Mr. Thatcher had glossed very lightly over the weak points. No one was more adept at skating on thin ice than Mr. Thatcher, and there were some points on which he (Mr. Dollar) differed very strongly with him.

Mr. Thatcher had said that a transcript of the shorthand writer's notes was brought before the Council. During the eight years that he had sat there, he had never heard of that being done. He had heard a clipped and boiled-down version of the proceedings, limited to a few words, read by the Chairman, but never anything which could by the utmost stretch of imagination be described as a transcript of the shorthand writer's notes, and he challenged any one to prove that that had ever been done.

Mr. Thatcher again had referred to the difficulty of defining professional misconduct. That was a very unsatisfactory state of things for the profession, for what might be fun to the ox was death to the frog, and with a view to educating the profession and showing them the bases of the Council's decisions, he (Mr. Dollar) had with very great difficulty succeeded in getting the Council to pass bye-law 115, which provided that in the case of a person who made a defence to a charge, a note of the accusation, the defence, and the proceedings should be kept, and in the event of the person being condemned that report should be sent to the professional papers for publication. He was sorry to say like many others that had been passed, that bye-law had never been acted upon to his knowledge.

Lastly, the portion of the solicitor's remarks to which he most strongly objected was that portion where he advised them to appeal to the Council in a conciliatory spirit if anything was wrong, and they would put it right. He had himself appealed to the Council on a great many occasions, and on a great many occasions he had found himself in a minority of one. He did not ask for their sympathy. He was quite willing to continue doing what he believed to be right for the sake of right, and he should be neither moved by approbation nor condemnation in pursuing that course. He was afraid that that sounded very much like self-sufficiency, but that was the nature of the man who stood before them. He could not help it, and so he hoped they would excuse it; but there were two subjects which occurred to him at that moment upon which he had appealed to the Council not once but many times. One occasion was when he was last being elected, when two members of the Council, who between them had nominated, I think, eight members, thrust themselves upon the scrutineers and counted the votes of the men whom they had themselves nominated,—at any rate they were present and counted the votes and signed the returns. He thought that was a matter of common knowledge.

Mr. PERRYMAN, as one of the scrutineers, stated that only scrutineers counted votes, and not any Member of Council.

Mr. DOLLAR replied that he had made the objection before, and it had not been denied, and Professor Macqueen, who was there, could confirm it. It was referred to the next day, and he had proposed that no member of the Council who had nominated a person should count his votes, but had never found a seconder to that day.

Mr. SINGLETON pointed out that that course had been adopted and was actually carried out.

Mr. DOLLAR said it had never been openly allowed, if tacitly adopted.

Another point was that he had asked as a favour of the Council that if any accused person requested a public trial it should be accorded him.

Professor PRITCHARD intimated that when he was accused he asked for a public trial and got it.

Mr. DOLLAR replied that his meaning was that every member should have as an absolutely inalienable right the privilege of being tried in public if he so desired it. Their Registration Committee was the last of the courts which tried in secret, and he hoped that it would soon cease to be the last. He had brought that motion forward on two separate occasions; the Council had always passed it, but inasmuch as all motions had to be confirmed at a subsequent meeting held fourteen days afterwards, he inevitably discovered that there was no quorum, and that was not exactly what he called fair fighting. (Applause.)

Mr. W. HUNTING said there was no doubt that the paper under discussion was controversial, but the controversy seemed to have been made a great deal more acrimonious by the way in which each side had stated his case. He admired Mr. Dollar's honesty. Mr. Dollar had told them that nothing on earth would make him alter his opinions either in the way of approbation or condemnation. They had all recognised that for years; and that sort of man was just the kind of man one would expect to back up all the assertions in that paper, where lots of things were exaggerated and lots of things were left out, and the whole thing arranged not merely to throw light on the question, but to throw a little mud on the Registration Committee. Those things were not new. Mr. Dollar would remember a man who was threatened to be struck off the rolls for advertising, and Mr. Dollar would remember who was the accuser. He (Mr. Dollar) was present, but nothing was said about it. A circular had been discovered in Berkeley Square, but no one appeared to say who had brought it there; cross-examination of the man who brought it was absolutely refused. What had happened? The accused was told, "If you do not withdraw it you will be struck off the rolls," and the man did withdraw it. No man said one word in favour of the accuser at that time, or cross-examined him.

Mr. DOLLAR did not remember the circumstance, but he thought it a very strong reason why that state of things should be altered.

Mr. HUNTING agreed, and pointed out that he did his very best to get it altered, only the accuser sat on the Registration Committee.

That night two or three gentlemen, to begin with, had objected to the consideration of the subject before them at all. The remarkable thing was that they were good honest men, the sort of men they always credited with at any rate taking a right view of things, and with acting on principle. But they must bear in mind that acting on principle after all, when they came to inquire into it, really meant acting on their own personal opinions about anything. (Laughter.) When they analysed those hoity-toity notions they simply meant personal opinions, and he would ask them not to be misled when men talked about right, and justice, and principle, because it was only a matter of opinion, and they might be wrong in their opinion. Nobody did so much harm in the world as the good man who had gone wrong—both to himself and to everybody else. (Laughter.)

The subject of the paper was an extremely important one. He could not imagine anything more important than "the internal discipline of the veterinary profession," and he really thought that the gentlemen who good-naturedly thought it as well not to wash their dirty linen in public had

made a mistake for once. There was no doubt that the Registration Committee, as far as it had gone, had done injury to one man. He thought Mr. Clarke had proved that up to the hilt—and, as the Solicitor said, it had acted with too great leniency in the case of two other men, although he should not say much about that. But he did say that they had acted wrongly, and distinctly injured one man, and if it were only for the protection of one injured man he agreed that the rules should be made strict and everything should be done formally. At the same time there was a great deal of difference between blaming a man for having an irregular way of doing things and blaming him for his ignorance of law. When he was on the Council he believed that he had told them that they were ignorant of many things, but jumping on a man did not do any good: if they thought a man on the Council did not do his duty, all they had to do was to get rid of him.

Mr. Clarke in his paper said that the efficiency of the body absolutely depended on the individual character of its members. That was a broad statement that he entirely objected to. If they took twelve greengrocers, the greater majority of them being men of the highest intelligence, and made a jury of them, they at once became a collective fool. (Laughter.) They could have all sorts of character in the individual, but as soon as they mixed them and made twelve men of them, they balanced each other—unfortunately their prejudices did not always balance each other, but their knowledge—alas! (Laughter.) Mr. Dollar had told them that the Registration Committee was both prosecutor and judge.

Mr. DOLLAR was sorry to interrupt, but if Mr. Hunting could adduce a case in which the Council had refused to carry out the dictum of the Committee, there might be something in what he (Mr. Hunting) had said. He (Mr. Dollar) did not know of one case during his eight years.

Mr. HUNTING was not going to adduce cases to prove Mr. Dollar's points. He wanted to show that Mr. Dollar's analogies were wrong. Mr. Clarke had told them that the Committee was not both prosecutor and judge, and those two gentlemen disagreed utterly.

With regard to the private hearing, they had been told that at any rate Mr. Banham had been allowed to have a public and open trial. Mr. Banham had applied for it; Professor Pritchard had applied for it, and had it, and he (Mr. Hunting) hoped he should get an open trial if he ever had occasion to ask for it. (Laughter.)

Mr. BANHAM remarked that he had been told he could bring some friends to his trial, but that was not till after the publication of the last *Record* before the trial, otherwise he would have asked Mr. Hunting to put it in *The Record*, so that the whole profession might have known, and he could have called all his friends. The Committee, however, had deprived him of that opportunity, and his trial came on after *The Record* was published.

Mr. HUNTING continuing said that at any rate a hardship had been done in one case, but the Registration Committee wakened up by Messrs. Banham, Clarke, Dollar, and Gray, had turned over a new leaf. They had opened the court to everybody.

Mr. UPTON asked whether they opened the court in the Cambridge case.

Mr. DOLLAR reiterated emphatically that no such thing as a public trial had taken place. There had never been a time in the history of the veter-

inary profession when a man had a right to demand a public trial. He had been allowed with bated breath to ask whether he might bring a friend or two, and once or twice the Registration Committee or the Council had with great magnanimity consented. That was what had been represented as a public trial.

Mr. HUNTING replied that as far as he knew that once or twice covered all the cases that had occurred.

Mr. DOLLAR asked how that could be when they had thirty or forty cases every three months.

Mr. HUNTING, while protesting against the constant interruption, could only say that the majority of those men did not wish their cases tried in public. He knew that when he himself was brought up for taking money or for advertising, he should want his case heard in private. (Laughter.)

Mr. DOLLAR'S next complaint was that the name of the accuser was not made public. No one could prosecute unless a statement was made, and if the accused was acting individually he came there with his statement, or he supplied something or other in writing to the Registration Committee. Supposing it was a case of advertising, he would send up the page of *The Record*, or *Reynolds' Newspaper*, or *The Christian World* (laughter), or the page out of whatever newspaper the advertisement happened to be in. That was evidence so far as it went.

Mr. DOLLAR remarked that it was evidence of absolutely nothing. It was simply a piece of paper.

Mr. HUNTING insisted that it was evidence of an advertisement of some kind.

Mr. DOLLAR retorted, certainly not. He might have had it printed privately himself in that form.

Mr. HUNTING, after appealing to the chair for protection against the repeated and unfair interruption, proceeded to point out that that was just the subtle and metaphysical way in which his opponents treated the subject. Of course a man might send a sign-board or a photograph up; that would not be proof, but it was evidence. An advertisement in a newspaper, or a pill-box with a label on it was not proof, but it was certainly evidence, and upon that the Registration Committee had a perfect right to act, so far as to ask a man if it was his, and if so, what he did it for? If there was a self-accusing sign-board, or anything of that sort, or a cheque with a man's endorsement on it, that was legitimate evidence.

Mr. DOLLAR pointed out that the danger was, as in Mr. Banham's case, that a thing thirteen years old might be produced as of yesterday's date.

Mr. HUNTING agreed that Mr. Banham had been hardly treated, but how much easier would it have been for Mr. Banham to have said, "Why, this is thirteen years old."

It had been suggested that they should have a veterinary union to preside over their morals and internal discipline, and that they should have a previous trial by the Union before going to the Council.

Mr. DOLLAR said he had proposed nothing of the kind.

Mr. HUNTING replied that Mr. Dollar had pointed out the method of doing things in the medical profession, and it seemed to him that instead of the individual prosecuting there, the Medical Union undertook to bring before the General Medical Council cases that it thought should go there. If it thought a case should go there, and was an honest body, it should have considered that case. If it were not an honest body it would send

them on without considering them. That seemed to him to be most unfair, and an *imperium in imperio* of the very worst nature. There they had a body not responsible to anybody for libel. Why should they not go to the higher body at once? He was of opinion that if they simply altered the formal methods adopted by the Registration Committee they would have a much better arrangement than the *imperium in imperio* that Mr. Dollar had brought before them as a sort of Heaven-sent arrangement for doing justice. The Registration Committee was controlled by the Council, and the Council was controlled by the Privy Council. It had been found by practice that the Registration Committee was not perfect, and that its rules and regulations and its methods were capable of improvement, but he did not know that either the Committee or the Council had declined to alter its methods, and he had understood from the Solicitor that night that they offered to alter their ways and to do all the justice they possibly could. If there were any men on the Council who objected to alter, let them know who they were, and let them do as they had a perfect right to do—alter the constitution of their Council by leaving out those members who do not do right; but let them first be quite sure about the right. (Applause.)

It was proposed by Mr. Perryman, seconded by Mr. Savournin, that the discussion be adjourned to the next meeting.

Carried with two dissentients.

A vote of thanks to the Chairman terminated the proceedings.

THE YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE Spring Meeting of the Society was held at the Hotel Metropole, Leeds, on Friday, April 25th, the President (Mr. Frank Somers) in the Chair.

A CASE OF SARCOMA.

The PRESIDENT exhibited the skull of a horse which he had ordered to be killed. He explained that about a month ago he was suddenly called to see the horse, which was described as suffering from an abscess on its head. The owner had just bought the animal. He (the President) went to see the horse, and instead of an abscess found an immense tumour. The right eye was missing and the other eye was blind. The animal was in great suffering and could hardly move. After an examination he suggested that the horse should be slaughtered, and this was done. He had no complete life-history of the case, but shortly after the animal was killed he went to the knacker's yard. The knacker had been very quick, for when he got to the yard the animal had been boiled. The head was the most terrible that he had seen in his experience. The whole of the structures on one side had been eaten away, and he attributed this to a cancerous growth. As far as he could ascertain, eighteen months before a man struck the horse at Bradford with a fork, knocking its right eye completely out. The man got three months imprisonment, and it served him right. Subsequently the horse was seen by Mr. Bowes. How the horse lived so long he really did not know.

Mr. BOWES said he only saw the animal once, and that was six months ago. It then had an abscess which he lanced to give the animal temporary relief. He told the owner that he considered the bone was diseased. The

owner decided to sell the horse for what it would fetch rather than be bothered with its illness. In his opinion, what he saw was not due to the original blow for which the author of it got three months, but probably the horse, being blind, subsequently knocked the bone on something. If the blow on the eye was the cause, the symptoms described would have developed themselves earlier.

Mr. CHAMBERS observed that his firm had a similar case last summer, the animal being an old milk pony. There was a very great enlargement and softening of the facial bones.

Mr. M'KINNA said the case to which the President had drawn attention was one of those rare cases which they found during the course of their professional careers. From the conditions presented to them he had a difficulty in stating the true pathological nature of the case, though no doubt they pointed, as Mr. Somers suggested, to sarcoma. Interesting questions were raised by Mr. Bowes' speech—When did the disease begin, and what was the cause of it?

The PRESIDENT reminded the meeting that a Commission had been appointed to inquire into the subject of cancer, and said he had noticed that an authority had recently pointed out there were two well-known marked cases of cancer in human beings which arose from trifling injuries. And there was no doubt that malignant disease did follow injury. His reason for bringing the case forward was its rarity. He had not been able to demonstrate clearly the cause, as the horse's head had been boiled.

Mr. BOWES.—So far as I could judge six months ago it was an abscess.

Mr. SCRIVEN thought that first there had been some injury to the bone, and that what was described was nothing but an extension of necrosis.

Mr. BOWES.—I formed the opinion that it was necrosis of the bone.

The PRESIDENT held to the view that the eating away was due to a cancerous growth, though he appreciated the opinions expressed by Mr. Scriven and others. In reply to the Secretary and Mr. Chambers, the President said the discharge was not fœtid. There was no discharge from the nose.

Mr. LLOYD recalled a similar case, though he did not think it was sarcoma. Most likely it was osteo-sarcoma. The case had been in the hands of a layman who had used caustic, which brought it to a dead piece as large as a plate. When he saw the animal he had it killed.

A RUPTURE OF THE PECTORAL MUSCLES.

Mr. CHAMBERS said that a short time ago he was called to see a harness horse with swelling in pectoral region. The thing came rapidly without any known cause. It was fairly well defined and painful to the touch, with very little constitutional disturbance. Hot fomentations were used, and in four or five days a softening was found midway between the point of elbow and the median line between the fore legs, and an opening was made large enough to admit three or four fingers. The contents, which consisted of broken-down muscular tissue with a gritty touch, were pulled out in this way. The animal had made very satisfactory progress, and was about fit for his work. His opinion, before opening, was that the animal had been injured and a blood-vessel ruptured into the muscles of the part, and that there would be clotted blood to remove, but instead there was the gritty material mentioned. He did not know how the injury was done unless the animal had had a fall.

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RUPTURED BOWELS THROUGH A FALL.

The second case narrated by Mr. Chambers was that of a cow with twisted uterus which he attended on the previous Saturday. There was not, he observed, a suitable place inside to roll the animal, and the owner himself led her out into the yard. There the owner had a tug-of-war with the cow, and rolled her clean on to her back with a sudden twist of her neck. I told the owner to hold her head, and I tied her for rolling while she was down, and had no trouble in reducing the twisted uterus and getting the calf away. When the cow got on to her feet she grunted, and continued to grunt until she died on the following day. Before she went down she was lively and perfectly healthy. My opinion was that perhaps she had a foreign body in the honeycomb which had been forced through with the fall, or that some rupture had taken place.

The post-mortem examination revealed that the utero-genital organs and honeycomb were perfect, but the bowels were dark-coloured and ruptured, the lesions, in my opinion, being caused by the fall—by the weight of the calf on the bowels when the cow fell.

ANTHRAX IN THE WEST RIDING.

Mr. GREENHALGH recounted the history of a recent outbreak of anthrax on a dairy farm at Horsforth, near Leeds. A supposed case was reported by the farmer, acting on the advice of Mr. Bowes, to the West Riding Police at Leeds, and on the following morning he (Mr. Greenhalgh), in his capacity as one of the inspectors in the county, drove to Horsforth. The carcase and some of the intestinal organs were hung up in a barn; the spleen and other of the intestinal organs were in a cart in the yard. The carcase was in a flabby condition and the spleen was at least 18 inches long and some 8 inches thick, with scarlet patches on it. He was convinced that the animal died from anthrax, and accordingly condemned the carcase. Two other animals were suspected of the disease; they were lying down, dull and groaning. The three animals formed part of a herd whose milk went into Leeds. He stopped the supply. On another part of the farm were seventeen more cows supplying milk to Horsforth. These animals had not been in contact with the first herd, so the milk supply to Horsforth was not stopped. Four or five days after his visit to the farm one of the two suspected cows died; the other survived. When the time arrived to declare the farm free he invited the Leeds Medical Officer of Health (Dr. Cameron) and the Veterinary Inspector to the Corporation (Mr. G. E. Bowman) to the place, as the city authorities were interested in the question of the milk supply. A doubt had been expressed about the disease having been anthrax. A prevailing idea seemed to be that an animal could not be suffering from anthrax unless it died in twenty-four hours, but he differed from that view, and should like the meeting to express their opinions on the matter. He thought anthrax might be latent in the system for some time before it actually developed itself. The Leeds Medical Officer of Health asked him if he had taken some of the blood and cultivated the virus, but the orders were that nothing must be removed from the place.

The PRESIDENT.—A tip of the ear can be taken away. The orders mean, I should say, that there shall be no wholesale taking away.

Mr. GREENHALGH.—Yes, but the question of cultivating the virus is rather a difficult one to deal with.

Mr. BOWES, who was called to the farm in the ordinary way as a prac-

titioner, said he never saw the first cow before it died. On the occasion of his visit the cow was dressed and hung up in the barn; two cows were also ill. As soon as he saw the spleen of the dead animal he said it was a case of anthrax, and gave instructions that the police should be made acquainted with the outbreak. To confirm his diagnosis he took a little of the spleen home with him. He put the spleen under a microscope and the presence of bacilli in millions confirmed his diagnosis. As regarded the cultivation of the virus he did not see the necessity. He was surprised to hear Mr. Greenhalgh say that some doubt had been expressed in regard to the outbreak being anthrax. There was no room for doubt. With regard to the second and third cows their temperature was up to 108, and the pulse was very fast. One of these two lived for a week, and the other recovered, the reason being that they were saturated internally with creosote.

Mr. M'KINNA.—What was the origin of the outbreak?

Mr. BOWES.—It is difficult to say. It must have been the feeding stuff, but what part of it I cannot say. The people have been on the farm for sixteen years and have never had a case before.

Mr. GREENHALGH explained that the farm was very dry and that he could only account for the outbreak through the purchase of some straw from the Selby district. The corn miller who supplied the straw had forty cows but had no case of anthrax.

Mr. BOWES.—It could not have been the land, for the cows had been tied up. I think the reason of the idea getting about that anthrax is incurable is that you had not often a chance of treating the disease. You generally find the animals dead.

Mr. GREENHALGH asked the opinion of the meeting as to whether anthrax could be cured.

The CHAIRMAN.—That is a question about which eminent men differ.

Mr. CLOUGH recalled a statement by Professor Penberthy in a lecture that an animal affected with anthrax could get better.

The CHAIRMAN.—It is clear from that observation that anthrax can be latent in the system.

Mr. BOWES.—But in this instance there was no question of latency. There were all the symptoms of the disease. I say the disease can be and is occasionally cured. Anthrax in human beings is often cured.

Mr. CLARKSON said his experience was that anthrax was a quick and sudden thing. When a veterinary surgeon was called in he generally found the animal dead, but there were occasionally cases in which the animal lived for a certain time. He could distinctly remember Professor Penberthy's remarks about anthrax. The disease was quite as fatal in horses as in cattle. He had seen cattle with every symptom of anthrax live for a time, and he suggested that Mr. Bowes's treatment on the Horsforth farm had a great deal to do with the prolongation of life.

Mr. M'KINNA: Mr. Bowes certainly did the right thing.

THE TREATMENT OF BOWEL OBSTRUCTIONS.

Mr. CLARKSON said the President had invited him to contribute something to the afternoon's discussion. Looking through his notes at home he came across cases of obstruction of the bowels.

One case was that of a brown cart mare. He called at five P.M. The mare had been working all morning and had received two doses of medicine before his arrival. Pulse 55, soft and full, temperature 101 degrees. The food consisted of oats and chaff when at work, and the animal was out at

grass when at play. She was first noticed in pain (abdominal) about one o'clock. She was very violent and was kept on her feet only with very great difficulty. She was laid on his arrival in the straw-yard. There was slight tympanitis present, the fore legs out, and she was crouched on belly hugging the ground. She had a desire to roll over or lie on her back (flat). No peristalsis was noticeable on auscultation. She was raked but no dung was present. The mucous membrane was very dry and sticky, and the rectum immensely dilated, so much so that on giving her an enema by means of funnel and india-rubber hose pipe (manufactured on the premises) he easily got her to take 2½ stable buckets of warm water, which was retained for ten or fifteen minutes, and then evacuated as clear as when taken. He administered morphia grs. ij, atropia gr. 1·5th hypodermically, which gave almost immediate relief. The relief was so great that his client, knowing he was very busy, told him he need not call again that evening, as he could let him know if the mare had a relapse. He left tinct. chlor. of morphia (B.P. 98) to be given in ounce doses as necessary at intervals of not less than two hours. He was called to her again at three A.M., and learnt that she had commenced at midnight rolling about and sweating most violently, but she had quietened down somewhat soon after his client had left home to fetch him. He (Mr. Clarkson) found her with temperature unaltered, pulse very much weaker—almost imperceptible—still wet with perspiration, and with body surface cold and extremities deathly cold. She had been given one dose of medicine, but as she was very bad to manage she had received not more than half of it. He gave her immediately morphia and atropia hypodermically as before, and had her well wisped and rubbed, her ears pulled and dried, and had warm dry clothing put on. She again settled down after the hypodermic injection, and the skin became drier and warmer. She was in such a serious condition that he decided to stay with her some time longer. Another enema consisting of two buckets of warm water was given, which was only retained a few minutes and passed perfectly clear.

About seven o'clock she seemed to be sinking, the heart becoming weaker and more irregular, and the breathing being laboured; and she commenced to stand over on her fore legs and rock to and fro, apparently ready for falling. He advised the men to get up off the straw where they were sitting, and again auscultated the heart and found it irregular, weaker, and wavering, and with no decided beat. He at once injected hypodermically strychnine (½ a grain), and in two or three minutes the heart-beat improved in quality, and the breathing became less laboured. The mare laid down in about fifteen minutes and remained comparatively quiet for about an hour. He ordered the medicine to be given as before; the animal never swallowed more than half a dose. Saw her again about two o'clock; pulse and heart were then stronger, but she was so tympanitic that he tapped her in the usual way, leaving word to continue the medicine as directed previously. From this point she improved rapidly and made a perfect recovery.

In conclusion, Mr. Clarkson urged the importance of the hypodermic injection. If in this case he had not followed such a course the mare would have died from heart failure.

TUBERCULOSIS OF THE SPLEEN.

Mr. CLARKSON related that in 1896 Mr. Cooke, of Scarboro', brought under their notice a case of tuberculosis of the spleen in a horse. Among

the symptoms noted was the inability to get his head to the ground to eat. Another was that the animal if it were tapped under the jaw ran back, like a modified case of tetanus. He (Mr. Clarkson) wondered if that could be one of the symptoms of disease of the spleen, because since then he had had three cases of violent colic which had shown this symptom on elevation of the head. Two died, and on post-mortem examination revealed rupture of the spleen and no injury in the neck. The third animal recovered.

Mr. LLOYD had never seen a rupture of the spleen, but had noticed the running back on attempting to give medicine by the mouth to a horse. The animal fell down and was dead in a few minutes. The post-mortem showed that death was due to internal hæmorrhage.

Mr. BOWES said that probably one of the finest things for relieving tympanitis was sulphate of eserine.

Mr. CLARKSON thought it was a very risky remedy. He used it with very great respect.

Mr. BOWES: It is not risky if you avoid giving it to very old horses.

THE EFFECTS OF TIGHT BANDAGING.

Mr. SNARRY mentioned a singular occurrence to a hunter whose skin on the fore leg and back tendons had degenerated and sloughed. The horse, he observed, was hunted during the last season, and was apparently all right, in fact he was entered to run in a point-to-point steeplechase. The owner gave the animal a three-mile gallop, putting bandages on his legs. Within half-an-hour of his return the bandages were pulled off and the legs sponged down. Soon afterwards the legs began to swell to an enormous extent, and four or five days later the skin sloughed, and the tendons also degenerated and sloughed. A great discharge ran down the leg. He attributed the mischief to the tightness of the bandages. The horse, for which the owner had refused 250 guineas, would have to be shot.

SHIVERING AND STRINGHALT.

Mr. MASON called attention to several instances of horses passing a veterinary examination at the time of purchase, but betraying shivering after having been sent to their new homes by the railway. The matter was, he considered, one of the greatest importance to them as a profession. He could not account for the change, except it was that the shaking on the railway and the new surroundings produced such a nervous and excitable state as to bring out the disease, which must have been latent.

The PRESIDENT: Is the disease permanent?

Mr. MASON: Once stringhalt and shivering you have them for life.

The SECRETARY said it was not the same thing with stringhalt, though he had known a few horses to get rid of it ultimately.

Mr SNARRY mentioned a well-known Yorkshire horse case in which it was stated that the animal had stringhalt with his shoes on, but had not when his shoes were off.

Mr. MASON said stringhalt was more frequent among geldings and mares, and asked whether it was due to castration.

Mr. BOWES observed that the other day he castrated a colt because it had developed stringhalt.

The PRESIDENT said that stringhalt might arise from a variety of causes. For example, pressure on certain nerves would produce it.

The SECRETARY said he knew a pony entire which had stringhalt—only,

however, with his shoes on. He castrated the animal, and he had never exhibited the failing since—not even with his shoes on.

The meeting terminated in a hearty vote of thanks to the members who had introduced cases resulting in nearly two hours' discussion. The resolution was moved by the SECRETARY, and seconded by Mr BOWES.

THE GREAT COW CASE.

DECISION IN FAVOUR OF MR. ROBB.

ON Tuesday, 27th May, Sheriff Scott Moncrieff issued this judgment in what has now come to be known as the "great" cow case. Wm. Aitken, farmer and cattle dealer, Lewinside, Carnwath, sued James Robb, farmer, Woodend, Carnwath, for £18, 14s. 9d. under the following circumstances: —On 14th October last, defender exposed for sale at Lanark Auction Mart a calving cow, which was warranted sound in the milk-vessels, and under that warranty the cow was purchased by pursuer at £17. On 15th October, pursuer resold and delivered the cow to James Archibald, farmer, Plewlands Farm, Edinburgh, on the same warranty as he had obtained from defender. The cow calved at Plewlands on the 21st October, and it was then discovered it was incapable of giving milk from the diseased state of the udder and milk-vessels, and which disease had existed prior to the exposure by defender, and which was caused by what is generally known as a weed. Intimation was sent to the defender, who arrived at Plewlands with a veterinary surgeon, but despite the medical treatment the cow died on the 25th October. In the defence, the defender denied that the cow was disconform to warranty, and asked the pursuer to state from what disease it was suffering when exposed for sale.

The proof was heard by Sheriff Scott Moncrieff some time ago, and took several days, many expert witnesses being examined on both sides. His Lordship's judgment is as follows:—

"*Lanark, 27th May* 1902.—Having made avizandum—Finds that upon 14th October 1901 the defender exposed for sale at Lanark Auctlon Market a calving cow, which, in terms of the conditions of sale, was warranted sound in the milk-vessels, and that said cow was purchased by the pursuer for the sum of £17 sterling, which sum was paid by him; that upon the following day the pursuer resold said cow as correct to Thomas Archibald, farmer, Plewlands, Morningside, Edinburgh, and that it was delivered to him upon that date; that upon 21st October the cow calved, that she gave no milk, and that upon 24th October she died. Finds that the pursuer has failed to prove that the failure to give milk was due to a disease of the udder and milk-vessels, which existed prior to the foresaid exposure to sale by the defender. Therefore assoilzies the defender, and decerns. Finds the pursuer liable to the defender in expenses of process, to be taxed according to the higher scale, and further certifies this as a fit case for additional allowances being made to the following witnesses, viz.: —Alexander Duff Dunbar, Principal Williams, James Hunter, and Henry Taylor. Allows an account of expenses to be lodged, and remits it to the auditor to tax and report. W. G. SCOTT MONCRIEFF.

"NOTE.—Two lines of defence were taken up here. It was contended in the first place that although this cow was sold under a warranty to the

pursuer, this warranty did not cover her resale to the witness Thomas Archibald. I should not have been disposed to sustain this plea. This is an action at the instance of a party who admittedly held a warranty, and from his evidence and that of Mr. Archibald, it is clear that the arrangement between them was for a sale of sound dairy cows unless any special exception was made. But the defender further denies that there was any breach of warranty, and it lies upon the pursuer to prove that the failure of this cow to give milk, which has been established, was due to a diseased or defective condition which was in existence previous to the sale. In the case of Wright *v.* Blackwood, 11 Shaw, 722, it was pointed out by the Court that it lay upon the purchaser to show positively that disease existed prior to sale. The proof relating to the point plunges us into that conflict of evidence which the testimony of skilled witnesses almost always exhibits. The cause of the death of this cow is really of little importance. That death appears to have been due to septic poisoning following upon a gangrene which was evidently quite recent, but there may also have been a diseased or defective condition of the udder and milk-vessels of older standing. That there was such is the opinion of the first veterinary surgeon, Mr. M'Callum, who saw the animal after it exhibited signs of illness. He says that the cow showed evidence of an old-standing disease, and that even if she recovered she would never be of any use for dairy purposes. In his opinion the udder was shrivelled and bound with fibrous tissue, and he explains how an udder in that condition would be affected by parturition so as to cause the acute symptoms which were present in this case. As to the absence of milk, he, however, seems to admit that suppuration, which was present here, would entirely suspend the milk-giving function. Mr. M'Callum made no microscopic examination of the diseased part, and he admits that the use of the microscope is the most recent and more scientific mode, although he retains a preference for the naked eye. In answer to a question from the court, he states briefly upon what his opinion as to the duration of the disease was based, viz., "the state of the udder, which was fibrous, indurated, and scirrhous, and which all pointed to the result of a previous inflammatory attack which pathologically has altered its conditions." The question of whether there really was induration here is of the utmost importance, because, as I take it, induration does unquestionably point to an old-standing inflammation. Mr. M'Callum's view of the nature of the disease, when he expressed it at the post-mortem examination certainly received at the time some countenance from Professor Taylor, a witness for the defender. But the circumstances under which the examination took place must be kept in view, and the fact that further investigation has apparently convinced the Professor that there were no indications of induration. Mr. M'Callum's evidence is, however, quite supported by Principal Dewar, a gentleman of great experience and eminence. But Principal Dewar never saw the cow or any part of it, and his opinion is based upon a statement of the symptoms submitted to him by Mr. M'Callum. It seems to have been stated to him that while there was an absence of milk there was no inflammation (an opinion which conflicts with that of the defender's veterinary surgeon, Mr. Jarvie), and it was from information to this effect that Principal Dewar seems mainly to have come to the conclusion that the disease was not recent. Yet there was pus, and he admits that that is usually due to inflammation, and in an acute case may form in four or five days. Mr. M'Callum's theory is also that of Mr. G. A. Thompson, who inspected the

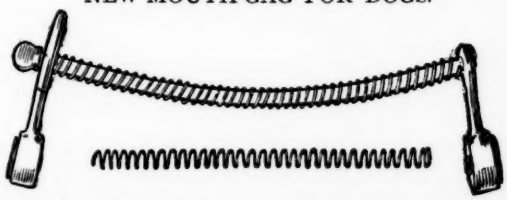
carcase. On the other hand, there is the evidence of Mr. Jarvie, who visited the cow in the interests of the defender, shortly before her death. Like Mr. M'Callum, his evidence is based upon what he could feel with the hand, and see with the unaided eye. Upon feeling the udder he could find no evidence of induration, and was of opinion that the disease from which the animal was suffering was acute mammitis or "weed," which had existed for a period of from two to four days. The absence of milk be attributed to the inflammatory condition. He thought it right to seek the advice of Principal Williams, who arrived, however, too late to see the cow in life. His opinion was, from an examination of the carcase, that the disease, which had proved fatal had only existed two or three days, and that if there had been old-standing disease he would there and then have discovered it. He did discover distinct signs of a quite recent wound in the teat, which might have led to blood-poisoning. I have thus gone over the main points in what might be called skilled, as apart from the scientific evidence. It is obvious that even here there is a conflict of opinion. The microscopic evidence is all in favour of defender, but the microscope was only used by his witnesses. I regret this fact, as it would have been more satisfactory if the pursuer had been able to submit the result of tests taken upon his behalf. Assuming, however, that an array of microscopic experts had appeared for him, there would still have been a conflict of evidence with the burden of proof upon the pursuer. The result of the scientific investigation as it stands is distinctly against the theory that there existed in this udder evidence of induration or of a fibrous condition, such as would indicate a disease of considerable duration. I do not think much importance should be attached to the previous history of this cow. The theory of the pursuer seems to be that she had, when in the possession of the defender, after a previous calving, been put to grass while imperfectly "yeld" or dry, and had contracted a "weed" which escaped observation at the time. But the evidence all points to the cow having appeared to be, while with the defender, and on and immediately after the date of sale, a perfectly healthy animal which had been properly attended to. On the other hand, although she seems to have arrived in condition at Mr. Archibald's farm, there is no doubt that she had been quite recently exposed to a good deal of fatigue upon the roads and to a railway journey in a truck while on the eve of parturition, and therefore in a condition in which a chill might more easily take effect. Mr. M'Callum admits that the treatment this cow received before and after the sale would predispose her to contract a "weed." But the question in this case is whether the pursuer has proved a breach of warranty, and looking to the conflict of evidence as to the real nature and duration of the disease, which unquestionably affected the milk vessels of this cow, I must answer this question in the negative. It is a case for the higher scale of costs, and reasonable allowances to the witnesses named in the interlocutor. W. G. S. M."—(*The Hamilton Advertiser*, 31st May.)

ANTIRABIC INOCULATIONS IN NEW YORK.

In the *New York Medical News* of April 5th, Dr. G. Gibier Rambaud, Director of the New York Pasteur Institute, says that during the years 1900 and 1901, 750 patients were received at the New York Pasteur Institute. Of these, 513 were bitten by dogs which were found not to be rabid for at

east one week after the accident, and did not receive the Pasteur treatment; 237 received the treatment. Six patients were treated at the St. Louis Pasteur Institute, which was opened in December 1900 to work in co-operation with the New York Institute under the direction of Dr. C. Fisch. Of these 243 persons, 3 died, 2 within fifteen days after the treatment, and are not included in the statistics, so that there were 241 persons treated, with one death, or a mortality of 0.41 per cent. Of these 241 persons treated, 33 were bitten on the head, 162 on the hands, and 46 on other parts of the body. In 88 cases the animal having inflicted the wounds was proved rabid by experimental inoculation, or by having caused the death of other persons or animals which it had bitten. In 60 cases the animal was declared rabid by veterinary examination. In 93 cases the animal had disappeared or had been killed after having acted in such a manner as to lead one to suspect hydrophobia. Patients are admitted for treatment only when there is strong evidence that the animal which bit them was rabid, and that in about 90 of the afore-mentioned 93 cases the animal had shown nearly all the clinical symptoms of rabies before disappearing or being killed. Of the 241 persons treated, 81 were children under 16 years of age, 129 men, and 31 women. In 220 cases the wounds were inflicted by dogs, in 13 cases by cats, in 2 by a cow, and in 2 by a calf. One hundred and sixty-five persons came to receive the treatment during the first week after having been bitten, 37 during the second week, 21 during the third week, 9 during the fourth week, 4 during the fifth week, 4 during the eighth week, and 1 during the sixteenth week. Among the 1608 cases treated since the opening of the New York Pasteur Institute in 1890, there have been 4 in which untoward symptoms could be traced to the treatment; 3 had a partial paralysis of the lower limbs, lasting from one to three weeks, and which in two cases was evidently brought on by undue exposure to cold. One had facial paralysis, lasting about four weeks, and due to the same cause; the patient was exposed to a cold draught after taking a very hot bath. It is known that exposure to cold may often bring on suddenly the symptoms of rabies in persons or animals being in the latent period of incubation. These four cases made uneventful recoveries. The New York experience is thus similar to that of all the other antirabic institutes. Briefly stated, this is to the effect that the antirabic vaccinations may cause slight nervous disturbances in neurasthenic and hysterical persons; these disturbances, however, have never been serious, and they are extremely rare.

NEW MOUTH-GAG FOR DOGS.



THE accompanying illustration represents an improved form of spring canine mouth-gag, designed by Mr. Gray, London.

It is fitted in the mouth into the canine teeth; these are received into

a hole in a piece of rubber situated at the ends of the arms. The mouth is kept open by means of the spring.

We have tried the gag, and it seems to act very well. It gives more room for operating than some of the other makes.

Mr. Huish, 12 Red Lion Square, London, is the manufacturer.

Reviews.

Report of the Division of Veterinary Science of the New Zealand Department of Agriculture.

We have received the Report for the years 1900-1901 of the Division of Veterinary Science of the New Zealand Department of Agriculture, prepared and edited by Mr. J. A. Gilruth, M.R.C.V.S., Chief Veterinary Adviser to the Government. The Report contains much valuable information, and among other things are articles on "Winton" Disease and Cancer in the Horse, which we reproduce.

It is a matter of regret that the New Zealand Government does not see its way to pay its veterinary surgeons better than it does, for it is quite certain that good men have much better pay at home and in some of the other colonies.

Pathologie Chirurgicale Générale par Leblanc, Cadéac, Carougau. 432 pp. 8vo. J. B. Bailliere & Fils, Paris.

The above book forms one of the volumes of the Encyclopédie Vétérinaire, published under the direction of C. Cadéac. There are now some twenty volumes of this series published, and when the whole series is completed practically the whole range of veterinary subjects will have been thoroughly gone into.

We much regret that we have no such equivalent in the English language, because most of the subjects in this series have been written by men who have made a particular study of the subject-matters of which they treat. This division of labour, or specialism, has thus contributed to make a splendid whole. It is almost impossible for any one man nowadays to make himself *thoroughly* acquainted with all the diseases met with in the lower animals, and all the surgical methods employed for their relief. The field is too extensive, hence the necessity for a plurality of authors.

The volume on General Surgical Pathology deals firstly with abscesses, ulcers, and fistulas, and then goes on to consider lesions due to traumatisms, burns, and scalds. Then follow what is perhaps of more importance, complications of traumatic lesions. In this chapter are discussed syncope, shock, erysipelas, septicæmia, tetanus, malignant œdema, purulent infection, actinomycosis, and bothryomycosis. The following chapters deal with rickets, osteoporosis, and melanosis, whilst the concluding ones are occupied with the consideration of tumours.

If we may select any points for special mention, they would be the articles relating to melanosis and osteoporosis. In this latter, however, the authors quote largely from Marconi, an Italian, who lately worked at this subject.

The book contains much new matter of interest to British practitioners, and we strongly advise any one wishing for enlightenment on any of the above-mentioned subjects to procure it.

The illustrations in some cases might be improved upon.

Notes and News.

SUGGESTED IMPROVEMENTS IN MILITARY RIDING AND BREAKING.

CAPTAIN M. Horace Hayes, F.R.C.V.S., on Thursday, 15th May, read a paper before the members of the Royal United Service Institution, with Major-General J. C. Russell in the chair, on "Suggested Improvements in Military Riding and Breaking." In the main the lecture was an attack upon the existing Cavalry Drill Book. The lecturer chose certain clauses from this work on the subjects of "passageing," "bitting," "feeling the horse with rein and leg," and "spurs," and showed that, in his opinion, the instructions contained in the drill book were wrong in principle. He also picked holes in that part of the drill book which refers to "the training of the young horse," claiming that experience had taught him that, while the instruction therein laid down "does moderately well for the civilised horses that are purchased as remounts in this country," it is of but little use with animals which have been brought up in a semi-wild state. Captain Hayes when upon his own subject always commands respect, even if other opinions are held; and it is interesting to find in the lecture the following reference to our present enemy:—"The great interest which the Boers took in the breaking and handling of horses showed me that they were far more formidable enemies than the English public gave them credit for being. It makes me very sad to contrast their horse knowledge with that of the cavalrymen with whom I went out to South Africa in a Government transport." This is an indirect accusation, which is followed by one that is more direct, and is of considerable importance. Captain Hayes states that "it is a fact that cannot be denied that many lives, especially those of young and inexperienced youths, have been lost in South Africa on account of these poor victims having been put on badly broken horses, which certainly formed the majority of the remounts."

We are glad to hear that Harvard Veterinary College in America will probably be re-opened soon, owing to its being about to have some share in the munificent endowments to the University of Messrs. Rockefella and Morgan.

Colonel Duck, C.B., Director-General of the Army Veterinary Department, term of office expires this year. We presume he will be succeeded by Colonel Nunn, D.S.O., C.I.E., the Deputy Director-General.

The health of General Sir Frederick Fitzwygram is again causing serious anxiety.

Recently one of the 40-inch mains of the Manchester Water Supply was cleaned out, and 700 tons of animal and fungoid growths with entangled mineral matter removed, the deposit being 3 inches thick. A 36-inch main in use from 1899 to 1901 yielded 165 tons.

CONTAGIOUS DISEASES ANIMALS ACTS, 1864 AND 1890.

SUMMARY OF RETURNS OF OUTBREAKS for the Four Weeks ending 17th May 1902.

ENGLAND AND WALES.

Swine Fever.	Anthrax.	Foot and Mouth Disease.	Glanders (including Farcy).	Sheep-Scab (for month of April).
Outbreaks 147 Slaughtered 637	Outbreaks 34 Attacked 53	Outbreaks 0 Attacked 1	Outbreaks 62 Attacked 120	Outbreaks 64

SCOTLAND.

None.	Outbreaks 19 Attacked 24	None.	Outbreaks 4 Attacked 4	Outbreaks 11

IRELAND.

Outbreaks 15 Slaughtered 203	None.	None.	Outbreaks 0 Attacked 4	Outbreaks 29

Communications, Books, Journals, &c., Received.

Agricultural Journal (Cape of Good Hope); Berliner Thierärztliche Wochenschrift; La Clinica Veterinaria (Milan); Deutsche Thierärztliche Wochenschrift; Tannoform in Veterinary Medicine (March); The Sanitary Journal; Scottish Medical and Surgical Journal; Veterinary Record; La Riforma Veterinaria; Le Mois Scientifique (Paris); L'Echo Vétérinaire (Liège); Annales de Médecine Vétérinaire (Brussels); Johns Hopkins Hospital Reports; Journal of Comparative Medicine and Veterinary Archives; Recueil de Médecine Vétérinaire; Gazette Médicale de Paris; Modern Medicine; Johns Hopkins Hospital Bulletin; Il Veterinario di Campagna (Moncalieri); Le Bulletin Vétérinaire (Orleans); Revista de Medicina Veterinaria (Bucarist); La Revista Veterinaria (Buenos Aires); Zeitschrift für Fleisch-und Milchhygiene (Berlin); Buletinul Societatii de Sciinte diu Bucuresci-Romania; Annual Report for the year 1901 of the Principal of the Royal Veterinary College to the Council of the Royal Agricultural Society of England; The Meat Trades Journal.